

Northeast

Municipal Solid Waste Planning Region

2007 and 2008 Qualitative Review



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Division of Solid Waste Management
Solid Waste Assistance Programs
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Introduction

Tennessee's Solid Waste Management Act of 1991 (SWMA) required solid waste regions to achieve a twenty-five percent (25%) waste reduction and diversion goal for solid waste going into Class I landfills by December 31, 2003. Under T.C.A. § 68-211-861, the basis for determining compliance with this goal was based on a per capita reduction measurement that may be adjusted for economic or population trends, or by a qualitative assessment that evaluates whether the region had comparable progress to those of similar regions that made the goal. Until 2003, the need to define the qualitative assessment was not necessary since there were no regions out of compliance. After the 2003 reporting period, 34 regions failed to meet the 25% waste reduction and diversion goal, which necessitated the promulgation of rules describing the methodology for qualitative assessment of regions failing to meet the per capita base year reduction and diversion. These rules became effective August 6, 2006.

The first step in the qualitative assessment process is to determine if the failing region met the 25% waste reduction and diversion goal using the real-time methodology. This method is calculated annually by dividing the total amount recycled and diverted from Class I landfills by the total generated waste stream. If the region did not meet the goal through this process, the region is then reviewed in order to determine if a "good faith" effort was made toward compliance and if their programs and solid waste infrastructure are qualitatively equivalent to like regions of similar population and economic characteristics who have achieved the goal.

In 2007, three regions failed to meet the goal by either base year or real-time methods. With a base year reduction of -50% and a real-time diversion rate of 15%, the Northeast Municipal Solid Waste Planning Region (the Region) was one of those regions. The Region is comprised of Carter, Johnson, Unicoi and Washington counties. Considered individually, Carter County made the goal in 2007. In 2008, five regions failed to meet the goal by either base year or real-time methods. With a base year reduction of -46% and a real-time comparison rate of 18%, the Northeast Municipal Solid Waste Planning Region was again one of those regions. Considered individually, Johnson County made the goal in 2008.

Carter County

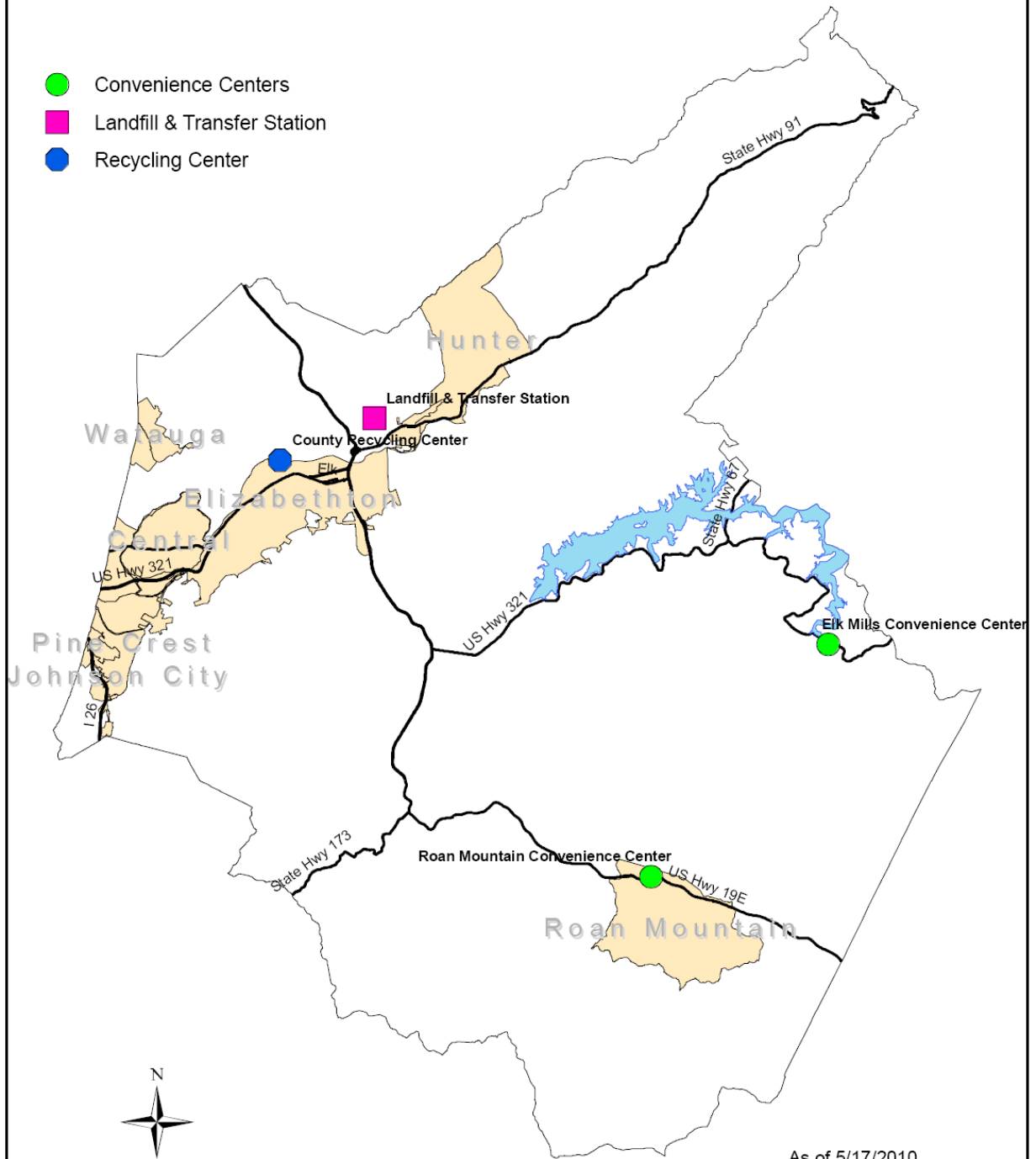
Independent of the Region, Carter County achieved a real-time diversion rate of 19% in 2008. Carter County, along with the six other counties which failed to meet the goal, was compared to counties that met the goal in 2008 and have similar population size and economic characteristics. The comparison counties for Carter County are Jefferson and Tipton.

On November 2, 2009, Nick Lytle with the Division of Solid and Hazardous Waste Management, visited with Carter County Mayor Johnny Holder, along with Chris Schuettler and Benny Lyons of the Carter County Solid Waste to discuss all facets of

the solid waste management program. Danny Hilbert of the city of Elizabethton was also interviewed to discuss Elizabethton's role in solid waste management within the Region. Visits were made to the two county convenience centers, the materials recovery facility (MRF), the county owned and operated Class III/IV landfill and the county transfer station. The equipment and facilities at each of those sites were examined and noted. Future facility and equipment needs for the program were also reviewed at the time of the visit.

Carter County Municipal Solid Waste System

- Convenience Centers
- Landfill & Transfer Station
- Recycling Center



Solid Waste Facilities and Infrastructure

Every county in Tennessee is required by law to provide a minimum level of waste reduction and waste collection assurance. Carter County's solid waste collection and recycling programs serve a population of 59,492 and an area of 348 square miles. The minimum number of convenience center sites required by state statute, based on Carter County's population, is calculated at two locations after subtracting the population served by the solid waste collection systems of Elizabethton. The county has two convenience centers: Roan Mountain Convenience Center located on Highway 19E and Elk Mill Convenience Center located on Greene Hollow Road off of Highway 321. The Carter County Transfer Station located at the Class III/IV landfill just northeast of Elizabethton serves as a third residential waste collection site.

The Roan Mountain Convenience Center utilizes a compactor and roll-off unit for collection of municipal solid waste. This center also collects mixed paper, corrugated cardboard, mixed metals and used oil.

The Elk Mill Convenience Center is a low-use center for a small number of residents in the Elk Mill Community within the Cherokee National Forest. It collects only municipal solid waste and provides no recycling options. Waste is collected here in a single roll-off container.

Both convenience centers operate on a Pay-As-You-Throw system. They charge \$1.00 per each standard size 40 gallon trash bag. The Elk Mill Convenience Center is open only three days a week from 9 am until 5 pm while the Roan Mountain Convenience Center is open Tuesday through Saturday from 8:00 am until 4:30 pm.

Waste generated from Carter County's two convenience centers, as well as from most private haulers in the county, is taken to the Carter County Transfer Station. All waste received at the transfer station is transported to the Carter Valley Landfill owned by BFI/Allied Waste located in Hawkins County. A small portion of waste collected by private haulers in the county is transported directly to the Iris Glen Environmental Center in Johnson City for disposal.

Two municipalities within Carter County provide door-to-door collection of solid waste for its residents. Elizabethton directly provides collection for each household in the city using city employees and trucks. The city operates two rear loading trucks and two front loading trucks and picks up waste from each residence once a week. The waste is then transported directly to Iris Glen Environmental Center in Johnson City. The city also provides limited commercial pickup at a standard fee for service. Elizabethton has a population of just over 14,000 residents but does not directly provide any recycling or waste reduction options other than a seasonal brush collection. This material is collected and then stored at the water treatment plant. Periodically, a contractor selected through county bidding procedures will cleanup this material. The final use of this material varies depending upon the vendor selected.

The city of Watauga provides collection service via a contract with a private hauler. Waste from Watauga also is transported directly to Iris Glen Environmental Center. Watauga does not provide any recycling or waste reduction options.

The county operates a MRF at 411 Cherokee Park Drive in Elizabethton. The building has abundant storage area for baled material. The building houses a single horizontal baler and skid steer loader. Corrugated cardboard, mixed paper, electronic scrap (E-scrap) and used oil are collected and processed at this facility. Residents may drop off material directly at the facility 7 am until 4 pm, Monday through Friday or from 8 am until 12 pm Saturday.

Financial Information

T.C.A. § 68-211-874(a) states that each county, solid waste authority and municipality shall account for financial activities related to the management of solid waste in either a special revenue fund or an enterprise fund established expressly for that purpose. According to the Fiscal Year 2007-2008 Annual Financial Report of Carter County Tennessee performed by the Tennessee Comptroller of the Treasury, the county operates a special revenue fund to account for its solid waste program. The solid waste financial information was examined by department staff. From a solid waste management standpoint, the expenditures and revenues appear to be in line with state mandates. Carter County's solid waste revenues and expenditures were found to be financially solvent.

Revenues

Charges for Services	\$801,679
Other Local Revenues	\$83,617
Total	<u>\$885,296</u>

Expenditures

Convenience Centers	\$43,863
Recycling Center	\$39,875
Landfill Operation & Maintenance	\$830,116
Other Services & Expenditures	\$18,839
Total	<u>\$931,693</u>

* Excess (Deficiency) of Revenues.....(\$46,397)

* The deficiency in the solid waste schedule covered by surplus in county's Solid Waste & Sanitation Fund.

Carter County's estimated total expenditures for Fiscal Year 2007-2008 were \$17,905,963 and the total revenues were \$18,931,411. The county's solid waste expenditures were \$931,693 and the solid waste revenues were \$885,296. The solid waste expenditures were 5.2% of the total county expenditures and the solid waste revenues were 4.7% of the total county revenues.

Environmental Field Office Report

A search of records at the Johnson City Environmental Field Office disclosed that the Elk Mill Convenience Center has repeatedly been sited with minor violations over the past five years for litter control problems and lack of cleanliness. These violations are often corrected but then reoccur. To date, the Department has not found it necessary to issue a Notice of Violation.

In June of 2009, the Department issued a warning letter in response to an unauthorized release of leachate at the closed Class I Carter County Landfill. The Department met with county representatives in August 2009, and the county presented documentation of the steps taken to correct the violation. The Department concluded that no more enforcement action was needed.

Solid Waste Planning Board

The Solid Waste Management Act states that every solid waste region in the state must appoint a solid waste planning board composed of representatives of each county and each city which participates in a solid waste planning region. The Municipal Solid Waste Planning Region Board is responsible for accurately reviewing and approving annual progress reports and is instrumental in the approval process for any new solid waste permits for the region. At a minimum, having an active board that meets with regularity is vital to complete these tasks. The planning board is also responsible for developing municipal solid waste plans, assessing disposal capacity, collection assurance, providing for solid waste education and assisting in other aspects of integrated solid waste management. Duties and powers of the solid waste planning board are spelled out in T.C.A. § 68-211-813 thru 815.

Carter County stated that the Northeast Municipal Solid Waste Planning Region's solid waste planning board meets two to three times a year. The management and operation of the Washington County Tire hub is a frequent topic of discussion. Carter County provides financial support to this tire collection center and transports all its used tires to this location. It has also been proposed that the Elk Mill Convenience Center be moved or closed due to infrequent use and the convenience center's operation is a financial burden to the county; however, no changes are expected at the present time. The county is losing its materials recovery facility location and is in the process of finding and securing a new site. The county hopes to establish a new facility that is better

designed to meet its recycling operation's needs while having the capacity for future expansion.

Analysis of Local Conditions

In 2008, the State of Tennessee averaged 1.1 tons per capita of waste placed into Class I landfills as reported in the Municipal Solid Waste Regional Annual Progress Reports. In contrast, Carter County reported 39,072 tons of waste going into Class I landfills, or 0.66 tons per person.

Carter County is part of the Northeast Municipal Solid Waste Planning Region and no individual county landfill data exists for the 1995 base year for counties that are part of multi-county regions. Carter County's current year disposal cannot be directly compared against the 1995 base year, as the disposal of the entire region is aggregated within the historical files. Therefore, it cannot be determined if Carter County is disposing more or less waste in Class I landfills since 1995. The Solid Waste Management Act of 1991 states that since the Region as a whole failed to meet a 25% reduction in waste, each individual county also fails as well.

In 2008, Carter County achieved a real-time diversion rate of 19%, which is calculated by dividing the sum of all material reported in the 2008 County Recycling Reports, both public and private, and all material diverted to Class III/IV landfills by the sum of all these materials plus the material disposed in all Class I landfills.

Upon examination of the historic Municipal Solid Waste Annual Progress Reports, it was found that Carter County has had erratic Class I disposal numbers and private recycling data. In 2005, a Class I disposal number was reported and accepted by the Department that was about 75% higher than what was reported for the next three years. The Class I disposal numbers reported in the Annual Progress Reports have agreed with the disposal data collected by the Division in the Quarterly Reports for Origin of Class I Municipal Solid Waste (Origin Reports), ruling out poor or false reporting of tonnages by Region representatives. The Department speculates that the change is due to importing and exporting of waste between regional landfills and misrepresentations within the Origin Reports of the true origin of the waste. The fluctuating private recycling numbers are likely due to frequently changing attitudes toward sharing information by these businesses.

	2005	2006	2007	2008
Class I Disposal	70,199	44,196	39,617	39,072
Class III/IV Disposal	5,352	7,395	8,210	5,857
Public Recycling	551	566	804	942
Private Recycling	20	39,981	10,165	2,516
Real-Time Diversion Rate	8%	52%	33%	19%

Carter County has a current population of 59,492 with a mix of rural and urban areas. Based on state and national trends of solid waste disposal for areas similar to Carter County, expected annual landfilling and public recycling totals should be close to 0.8 tons per person per year or about 47,000 tons of waste per year. Summing up the 2008 Class I, Class III/IV and public recycling values yields a result very close to this, while 2005 seems to be in error.

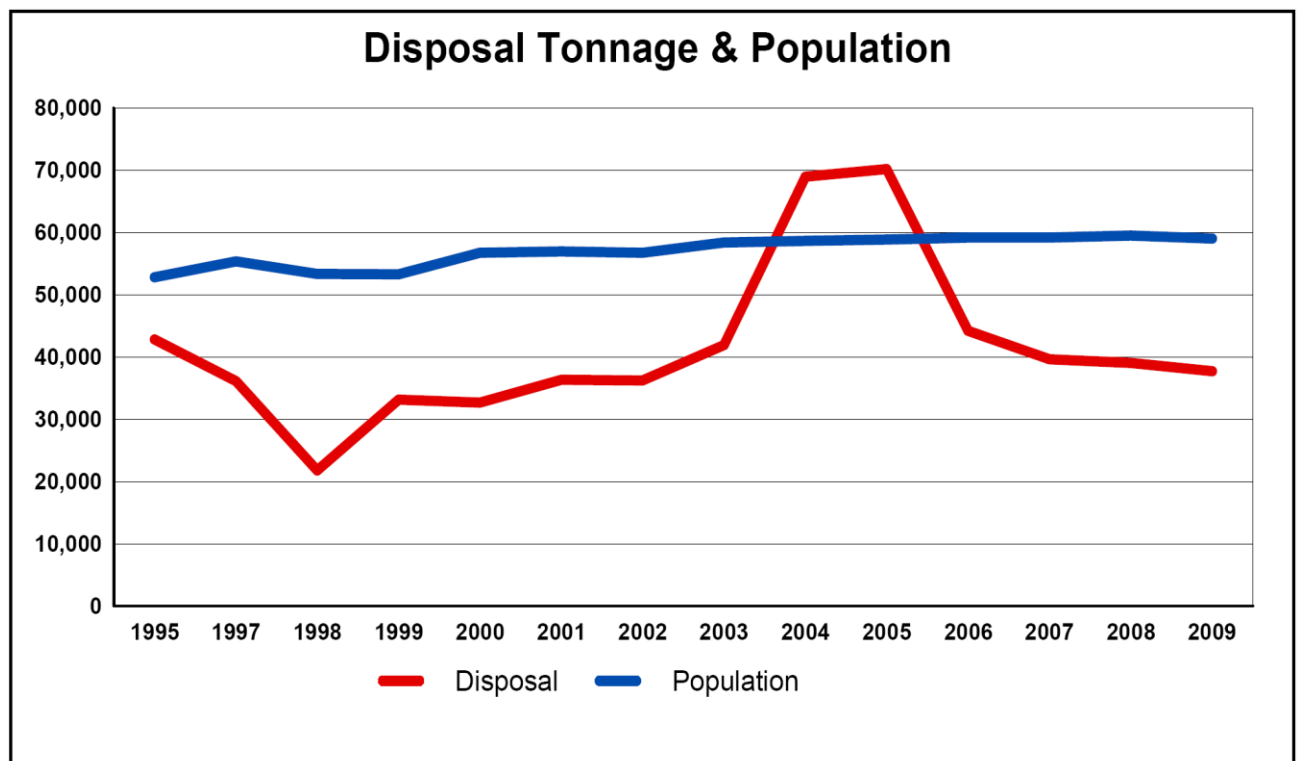
The 52% real-time diversion rate shown in 2006 is due mostly in part to 31,950 tons of metals from a large scale metal scrap yard. Recycling numbers from this particular metal scrap dealer were not obtained in any other year, although the entity responsible for the large 2006 numbers is still in operation.

Post consumer household recycling opportunities for residents are limited to mixed paper and corrugated cardboard. Notably absent from the municipal and county recycling programs is plastics recycling.

The majority of the county's population is located in and around Elizabethton, in the northwestern part of the county. Only two drop off locations for paper products exist in this area, the Transfer Station and the Materials Recovery Facility. The current Carter County Materials Recovery Facility is located on the site of a proposed fish hatchery located in the Cherokee Industrial Park in Elizabethton. The long term future of the MRF is unknown as construction of the hatchery has been delayed several times due to State budget appropriations. The funding for the hatchery was removed from the current State budget and there is no immediate construction scheduled at the site. The facility has very limited capacity and expansion of the recycling program will require a renovation of the facility or relocation. Until an ultimate decision is made on the hatchery's future, Carter County will have difficulty making any investments in the MRF.

Statistics

Year	Population	Disposal	Tons Per Capita
1995	52,791	42,844	0.81
1997	55,377	36,130	0.65
1998	53,321	21,794	0.41
1999	53,299	33,137	0.62
2000	56,742	32,656	0.58
2001	56,927	36,340	0.64
2002	56,746	36,230	0.64
2003	58,394	41,926	0.72
2004	58,622	68,954	1.18
2005	58,865	70,199	1.19
2006	59,157	44,196	0.75
2007	59,198	39,617	0.67
2008	59,492	39,072	0.66
2009	59,043	37,734	0.64



Comparison Counties

Based on the Northeast Municipal Solid Waste Planning Region's and Carter County's reported Class I disposal and tons diverted, the region and county failed to meet the mandated 25% solid waste reduction goal in 2008. Therefore, the Department is required to objectively assess the activities and expenditures of the region, and local governments in that region, to determine whether the region's program is qualitatively equivalent to other regions that met the goal, and whether the failure was due to factors beyond the control of the region. This qualitative assessment method, prescribed by the Department and approved by the Municipal Solid Waste Advisory Committee, was promulgated as a rule in accordance with the provisions of the Uniform Administrative Procedures Act, compiled in Title 4, Chapter 5. The two counties selected for comparison with Carter were Jefferson and Tipton.

JEFFERSON COUNTY MUNICIPAL SOLID WASTE PLANNING REGION achieved the waste reduction and diversion goal in 2008 with a base year reduction of 33% and a real-time diversion rate of 39%. The county had a 0.48 per capita disposal rate in 2008 and has shown consistent Class I disposal numbers over the past ten years.

Jefferson County collects municipal solid waste through the utilization of nine convenience centers that are scattered throughout the county. All but one of the convenience centers are serviced by a roll-off system. The remaining convenience center uses front end loader boxes. The county picks up the waste that is placed into the containers and transports it to the county owned and operated Class I landfill located in Dandridge.

Metal is collected at the convenience centers in forty cubic yard open top containers. Currently, a private individual collects the metal from each location and transports it to end users. Paper and corrugated cardboard is collected at each convenience center utilizing front end loader containers. The material is transported to the county processing center located at the Old Landfill Site Convenience Center at 330 Landfill Road in Jefferson City. There it is baled and sent to market.

The city of Jefferson City contracts their collection of Class I waste to Waste Connections, Inc. The residents are provided a 96 gallon container which is picked up once a week with a side loader truck. Recyclables are collected also through a contract with Waste Connections, Inc. every other week. Jefferson City is one of four Tennessee municipalities utilizing the RecycleBank program to reward citizens for the amount of recyclables they separate out of their waste streams. The city also provides for seasonal curbside yard waste pick-up.

The city of Dandridge currently picks up their waste utilizing a one man side loading truck. The residents are provided a 96 gallon container for disposal which is picked up once a week. Dandridge collects cardboard and paper once a week from its residents. The residents are provided a 14 gallon blue bin and the city picks up the cardboard and paper using a rear loader which takes the material back to the public works compound

and places the material into a 30 yard container. When the container is full the material is taken to the MRF at Goodwill Industries in Rogersville.

The city of Baneberry is a small private resort community of less than 300 people that provides for once a week curbside pickup through a private contract. The municipality does not offer any recycling opportunities to residents.

The city of New Market provides for the curbside collection of municipal solid waste by utilizing a 20 cubic yard rear loader. Waste is collected once a week by a three man crew. The municipality does not offer any recycling opportunities to residents.

The town of White Pine also provides for their own curbside collection of municipal solid waste. White Pine utilizes a rear loader and picks up the waste once a week for their residents. The municipality does not offer any recycling opportunities to residents.

All waste collected by the municipal and county governments is taken to the Class I landfill in Dandridge that is owned and operated by Jefferson County.

Jefferson County's estimated total expenditures for Fiscal Year 2008-2009 were \$28,658,134 and the total revenues were \$31,042,342. The county's solid waste expenditures were \$1,524,538 and the solid waste revenues were \$1,648,183. The solid waste expenditures were 5.3% of the total county expenditures and the solid waste revenues were 5.3% of the total county revenues.

TIPTON COUNTY MUNICIPAL SOLID WASTE PLANNING REGION reported a 31% base year reduction and a 38% real-time diversion rate of its municipal solid waste going to Class I landfills during 2008. This was achieved with a 0.68 tons per capita disposal ratio and a gradual reduction in Class I disposal from 55,333 tons in 2000 to 39,738 tons in 2008 even though the population rose from 51,271 to 58,706 during this same period.

Tipton County's solid waste program is operated with one convenience center and a contract with Republic Waste Service to offer uniform waste collection service to those residents desiring it. The convenience center is located just outside Brighton at the site of the transfer station/MRF/Class III/IV landfill. All county residents pay a \$35 annual waste handling fee, in addition to \$25 monthly collection fee to Republic if they desire curbside collection service.

The solid waste department employs a combination solid waste director/recycle coordinator/commodity marketing director, a MRF director, two Class III/IV landfill operators, a litter program director, and two convenience center operators. The director of Keep Tipton Beautiful works with the schools and business community to expand the recycling and litter prevention programs. Twenty-five percent (25%) of the TDOT Highway Beautification Grant funds are directed to the schools programs.

The city of Covington contracts with Republic Waste Services for mandatory curbside pick-up at a monthly rate of \$17, collected with the residents' water bill. The other seven municipalities have no contractual collection service and have to either subscribe to a service on their own or utilize the county's convenience center. Neither Tipton County, nor any of its municipalities, have any curbside recycling pick-up, although there are recycling drop-off sites for cardboard and newspaper in Atoka, Munford and Covington, and for cardboard at Brighton and Munford High Schools, and Austin Peay and Drummonds Elementary Schools. These sites are serviced by the county and all materials are transported to the county's MRF for processing and marketing. The solid waste director handles the marketing of these materials and seeks the best market price available at the time of the sale.

Tipton County's estimated total expenditures for Fiscal Year 2008-2009 were \$28,498,513 and the total revenues were \$25,806,421. The county's solid waste expenditures were \$870,762 and the solid waste revenues were \$1,013,097. The solid waste expenditures were 3.1% of the total county expenditures and the solid waste revenues were 3.9% of the total county revenues.

Qualitative Equivalency

As stated earlier, T.C.A. § 68-211-861 requires each municipal solid waste planning region to achieve a twenty-five percent (25%) reduction and diversion goal for solid waste going to Class I landfills. Carter County's failure to realize this goal caused the Department to assess the county's solid waste reduction program expenditures and activities to determine if it was qualitatively equivalent to other comparative counties that did reach the reduction goal.

During this qualitative assessment visit to Carter County by department staff, all areas were determined to be qualitatively equivalent to those of the comparative counties. Department staff noted some areas of the system that can be improved. These areas are discussed further in the "Recommendations for Improvement" section of this document.

Needs Assessment

T.C.A. § 68-211-811 required the development districts to submit a district needs assessment for each county in the district by September 30, 1992. These needs assessments, to be conducted by the development district staff, shall be revised to reflect subsequent developments in the district by April 1, 1999, and every five (5) years thereafter. Carter County's Needs Assessment was completed by the First Tennessee Development District. The Carter County Needs Assessment, revised for 2009, reports that the county's failure to meet the goal when using the real-time calculation method, is primarily due to the lack of recycling and waste reduction data from private entities such as businesses and industries. Historically, across the State, region's that have a high

participation rate from businesses and industries in reporting recycling data, typically achieve greater than a 25% waste reduction rate using the real-time calculation method. Carter County and the other counties in the Region have been implementing a business and industry waste reduction and recycling reporting program through the First Tennessee Development District the past few years. This is a voluntary program started by the Development District in 2001. Nearly 50 businesses and industries in Carter County are surveyed each year by the district. When participation in completing the survey is low, the percentage of waste reduction is also low.

The assessment references several infrastructure improvements that Carter County needs to make in the next 5 years. Most notably among these improvements is replacing old, dilapidated equipment within the solid waste management system. This includes collection trucks, front-end loader, compactor (class III/IV landfill) and recycling collection truck. Carter County is facing significant expenses in the near future to replace this equipment. An equipment replacement schedule is needed to continue the progress the county has made in its recycling and waste reduction efforts. Also, additional drop-off recycling sites and an additional convenience center are needed to meet the needs in areas of the county where population growth is occurring. These infrastructure needs have been identified as necessary to meet and maintain the waste reduction goal.

The assessment states that there are currently no identified needs in staffing or facilities to provide a full level of service. Carter County and Elizabethton are currently delivering a level of service that is meeting the needs of their respected communities. Replacing aged and outdated equipment will continue to be a need in both of the local governments over the next 5 years, primarily for Carter County. However, no additional equipment is needed to increase the level of solid waste collection and disposal services. Two short-comings in the county's solid waste management system are the need to implement a continuous program for accepting and recycling electronic scrap (E-scrap) and a program to accept latex paint to remove it from the household hazardous waste (HHW) mobile collection events provided by the State. Funding and staffing needed to implement a latex paint program are the primary obstacles at this time facing Carter County.

The Needs Assessment concludes that Carter County is significantly underfunded in its solid waste management and recycling program. Tipping fees collected at the county's transfer station are the primary funding source for the program. However, revenue generated from tipping fees in recent years has not been sufficient to adequately fund the program. Therefore to offset the budgetary shortfall, general funds have been used to balance the landfill and solid waste program budgets. There are several pieces of equipment that need to be replaced and ongoing operating expenses continue to place a financial burden on the program. Ideally, tipping fees would be the sole source of revenue to fund the program; however, with other disposal options in the area, tipping fees must remain competitive but well below the amount needed to fully fund the program. Carter County has tried several options to generate revenue, but tipping fees and general fund allocations will likely continue to be the source of revenue to meet

solid waste management needs over the next 5 years. The Needs Assessment does not detail any revenues from the sale of recycled commodities.

According to the assessment current attitudes of the citizens of Carter County toward recycling and waste reduction efforts have basically been about average for counties of similar size, population and economic vitality. While there are some residents that fully support and participate in the drop-off recycling program, most residents are still reluctant to view recycling and waste reduction as an important option. However, there appears to be some change in the behavior of the community since the creation of the Carter County Chamber of Commerce Environmental Committee and efforts to establish a Keep America Beautiful affiliate. At its monthly meetings, the Committee regularly discusses waste reduction and recycling efforts in the county. The Chamber is also leading an effort to partner with a local materials processor to establish a more user friendly recycling processing system and drop-off site for residents of Elizabethton and annually includes discussions on the county solid waste management program in its Youth Leadership Program.

Lastly the assessment states that, if funded, a new recycling equipment grant will be used to expand the county's drop-off recycling program at all five of the high schools in the county. Efforts from the County Mayor's office are being geared toward increasing participation in the county's recycling program and education will be a major component of this effort. The current general feeling is that most residents approve of recycling as an option to waste disposal but are not motivated to participate consistently. If measures could be implemented, a program designed to show the public the environmental and financial benefits to the community of recycling and waste reduction programs should be implemented.

Recommendations for Improvement

Although Carter County was qualitatively equivalent to the comparison counties, the following are areas that should be considered for future success:

- The city of Elizabethton should assist the region in waste reduction by taking a more active role in providing recycling opportunities to its residents (e.g., curbside recycling, centralized collection points, partnership with other governments, school and institutional programs). Any waste reduction programs instituted by the city should be communicated and reported through the regional Annual Progress Report.
- Elizabethton should report tonnages of yard waste collected in the Annual Progress Report if that material is reaching a beneficial end use through its vendor. The Region currently reports no wood or yard waste mulching or composting programs.

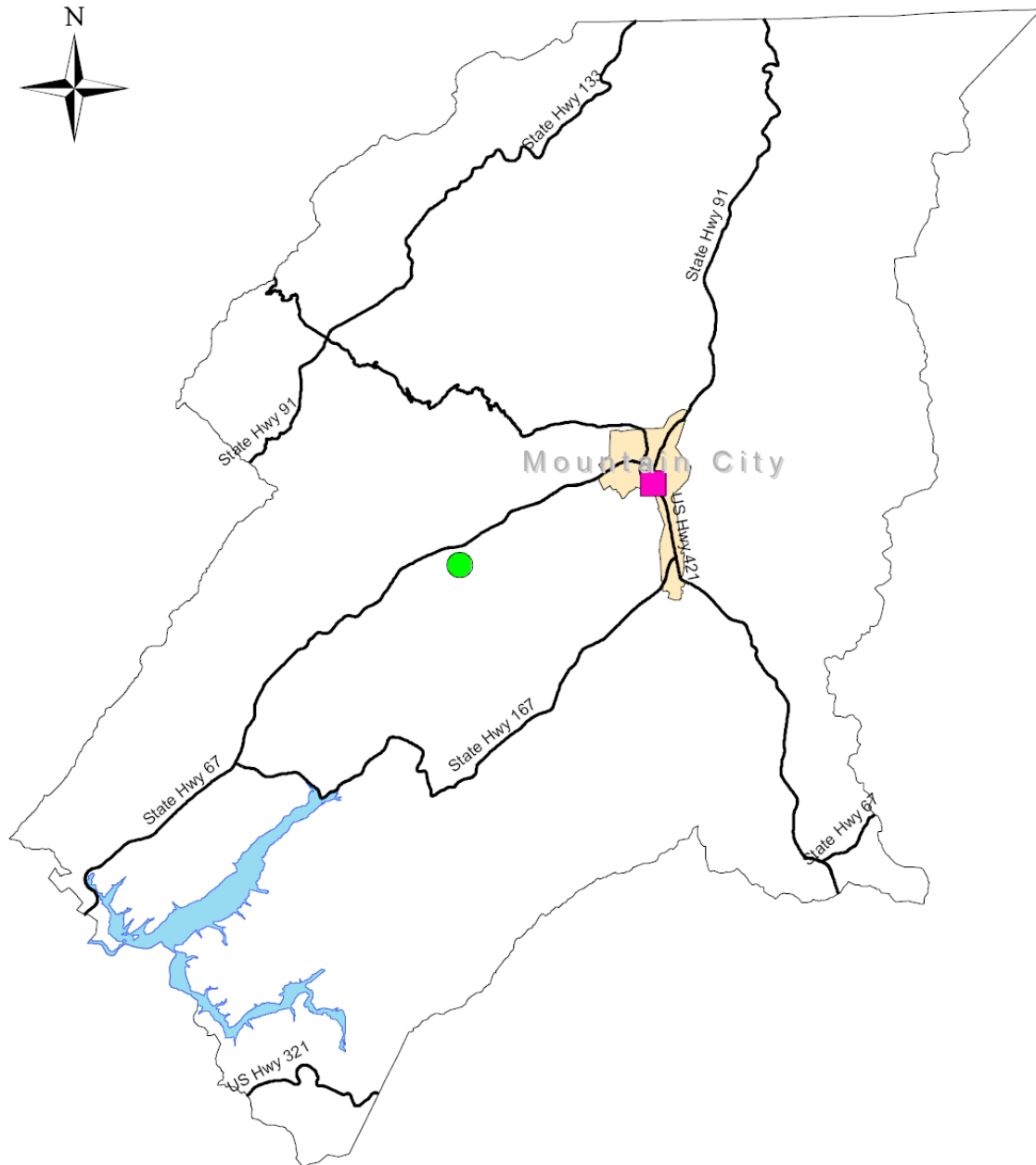
- The Region's solid waste planning board needs to take a more active part in the county's waste management effort, as provided by T.C.A. § 68-211-813(a)(4)(b)(1). In addition, the board should work to adopt resolutions prioritizing waste diversion as well as improving current solid waste disposal infrastructure and programs.
- Elizabethton and the surrounding area contains a number of businesses that are likely recycling a significant amount of waste, yet in 2008 County Recycling Reports in the Municipal Solid Waste Annual Progress report showed only 2,516 tons of commercial, industrial and institutional recycling. In contrast, Tipton County reported nearly 700% more material in these categories. Tipton County landfilled more material than Carter County with 1% less population and showed only slightly more post consumer residential recycling. With more diligence in surveying and reporting of commercial, industrial and institutional recycling Carter County would achieve a real-time diversion rate greater than 25% as they have in years previous and subsequent to 2008.
- Public drop off locations within Carter County are limited when compared to convenience of recycling opportunities within Jefferson and Tipton. Additional drop off locations need to be added at key locations such as schools and business centers.
- The Region should consider adding a plastics recycling. Comparable counties in population size to Carter often offer this service and with Elizabethton serving as a satellite city to Johnson City, it too could maintain such a program either independently or through a partnership with the county.



Johnson County

Independent of the Region, Johnson County achieved a real-time diversion rate of 2%. Johnson County, along with the four other counties which failed to meet the goal, was compared to regions that met the goal in 2007 and have similar population size and economic characteristics. Grainger and Lewis counties were selected for Johnson's comparison in calendar year 2007.

On November 3, 2009, Nick Lytle with the Division of Solid and Hazardous Waste Management, visited with Johnson County Mayor Dick Grayson and Johnson County Solid Waste Director Jason Blevins to discuss all facets of the solid waste management program. Visits were made to the county's transfer station and convenience center as well as the recycling center. The equipment and facilities at each of those sites were examined and noted. Future facility and equipment needs for the program were also reviewed at the time of the visit.

Johnson County Municipal Solid Waste System



-  Transfer Station, Convenience Center & Tire Storage Facility
-  Recycling Center

As of 5/17/2010

Solid Waste Facilities and Infrastructure

Every county in Tennessee is required by law to provide a minimum level of waste reduction and waste collection assurance. Johnson's solid waste collection and recycling programs serve a population of 18,006 and an area of 303 square miles. The minimum number of convenience center sites required by state statute, based on Johnson County's population, is calculated at one location while subtracting the percentage of the population served by the solid waste collection system of Mountain City.

The county fulfills the convenience center requirement through allowing citizens to drop off residential waste at the county transfer station that also holds a convenience center permit. Residents and businesses taking waste to the transfer station are charged \$52 a ton. This rate is somewhat higher than elsewhere in the state but is necessary due to the transportation costs attributed to the rural nature of the county. The transfer station has segregated containers for the collection of residential plastic and mixed paper products including corrugated cardboard. All post consumer residential recyclables are taken to Tri-Cities Waste in Kingsport. Scrap metal and white goods are accepted in an open top container and taken to a scrap metal buyer. The transfer station also houses a permitted tire storage facility, where tires are stored before being sent to the Washington County regional tire hub.

Mountain City is Johnson County's only municipality. Mountain City provides weekly collection of solid waste for all its residents through a curbside waste collection program comprised of municipal public works staff and county owned equipment. Residents are assessed a monthly \$7 fee on their utility bill to cover the cost of this program. Businesses may elect to have city waste service which is billed at rate of \$8 to \$13 a month according to the size of the business. The city also provides weekly dumpster service to larger businesses at a rate of \$120 a month. Waste collected by Mountain City is transported directly to the Iris Glen Environmental Center in Johnson City for disposal.

In addition to the curbside service provide by Mountain City, two private companies offer door-to-door collection for residents within the county. This is through a subscription service and is not associated with the Johnson County solid waste program. A percentage of the waste collected by the private companies is transported directly to Iris Glen Environmental Center or to Carter Valley Landfill in Hawkins County. The remainder of the waste collected by private haulers is taken to the Johnson County Transfer Station and then to Iris Glen Environmental Center.

The county and Mountain City co-host a recycling center located within the municipality. This facility is open two and a half days a week. Mixed paper and corrugated cardboard are collected separately in trailers. HDPE and PET plastic is collected in a compactor unit attached to a roll off container. A combination of local volunteers and city employees run the center.

Financial Information

T.C.A. § 68-211-874(a) states that each county, solid waste authority and municipality shall account for financial activities related to the management of solid waste in either a special revenue fund or an enterprise fund established expressly for that purpose. According to the Fiscal Year 2007-2008 Annual Financial Report of Johnson County Tennessee performed by the Tennessee Comptroller of the Treasury, the county operates a special revenue fund to account for its solid waste program. The solid waste financial information of Johnson County was examined by department staff. From a solid waste management standpoint, the expenditures and revenues appear to be in line with state mandates.

Revenues

Local Taxes	\$107,362
Tipping Fees	\$422,537
Other Local Revenues	\$11,672
Grants	\$4,608
Total	<u>\$546,179</u>

Expenditures

Sanitation Management	\$496,551
Total	<u>\$496,551</u>

Excess (Deficiency) of Revenues	\$49,628
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Johnson County's estimated total expenditures for Fiscal Year 2007-2008 were \$10,815,917 and the total revenues were \$11,290,387. The county's solid waste expenditures were \$496,551 and the solid waste revenues were \$546,179. The solid waste expenditures were 4.6% of the total county expenditures and the solid waste revenues were 4.8% of the total county revenues.

Environmental Field Office Report

A search of records at the Johnson City Environmental Field Office disclosed no major findings have been made during inspections at the Convenience Center or Transfer Station.

Solid Waste Planning Board

The Solid Waste Management Act states that every solid waste region in the state must appoint a solid waste planning board composed of representatives of each county and

each city which participates in a solid waste planning region. The Municipal Solid Waste Planning Region Board is responsible for accurately reviewing and approving annual progress reports and is instrumental in the approval process for any new solid waste permits for the region. At a minimum, having an active board that meets with regularity is vital to complete these tasks. The planning board is also responsible for developing municipal solid waste plans, assessing disposal capacity, collection assurance, providing for solid waste education and assisting in other aspects of integrated solid waste management. Duties and powers of the solid waste planning board are spelled out in T.C.A. § 68-211-813 thru 815.

Johnson County stated that the Northeast Municipal Solid Waste Planning Region's solid waste planning board meets two to three times a year. The management and operation of the Washington County Tire hub is a frequent topic of discussion. Johnson County provides financial support to this tire collection center and transports all its used tires to this location.

Analysis of Local Conditions

Johnson County is a very rural and mountainous county which is almost entirely contained within the Cherokee National Forest. Recycling and waste reduction in this county is challenging as it is in other rural areas that experience high transportation costs for commodities and where collection volumes are low due to sparse population densities. The nearest large municipality, the city of Bristol, is 40 miles away and requires traveling a number of mountainous highways. Potential buyers of recyclables in the area are very limited.

Johnson County is part of the Northeast Municipal Solid Waste Planning Region and no individual county landfill data exists for the 1995 base year for counties that are part of multi-county regions. Johnson County's current year disposal can therefore not be directly compared against the 1995 base year, as the disposal of the entire region is aggregated within the historical files. Therefore it cannot be determined if Johnson County is disposing more or less waste into Class I landfills since 1995. The Solid Waste Management Act of 1991 states that since the region as a whole failed to meet a 25% reduction in waste since 1995, each individual county also fails as well.

In 2007, Johnson County has an accepted real-time diversion rate of 2%, which is calculated by dividing the sum of all material reported with the 2007 County Recycling Reports, both public and private, and all material disposed of in Class III/IV landfills by these materials again with the addition of the material disposed of in all Class I landfills. In 2007, the county reported 11,712 tons of Class I waste or 0.65 tons per person. The State of Tennessee averaged 1.09 tons per capita in 2007. By this comparison, Johnson County's disposal rate was nearly one-half the State's average.

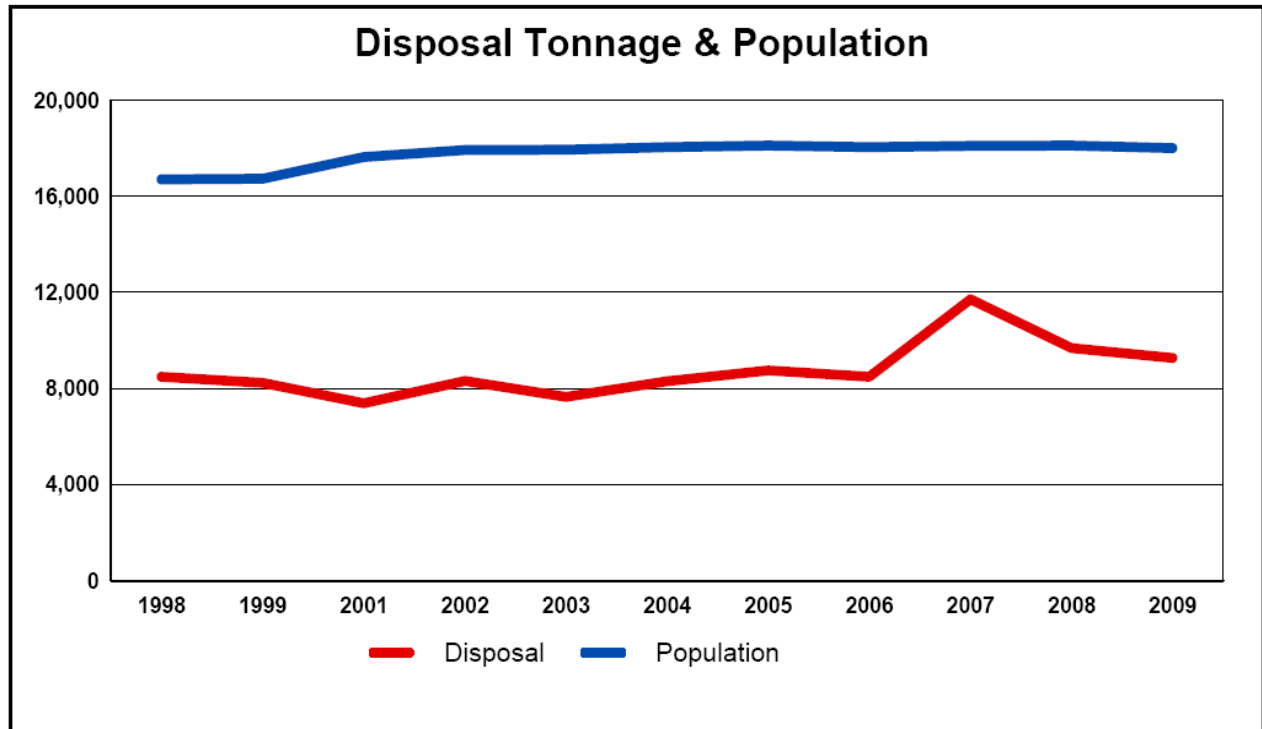
The 2007 calendar year saw Johnson County with a 38% increase in Class I disposal over the previous year. Furthermore, in the subsequent year of 2008, the county reported a 17% drop in disposal. After careful review of the Quarterly Solid Waste

Origin Reports submitted to the Division of Solid and Hazardous Waste Management directly by the permitted Class I landfills within the state; the large spike in disposal can be attributed entirely to one time 50% increase in tonnage in the 4th Quarter of calendar year 2007 at the Iris Glen Environmental Center in Johnson City and attributed to Johnson County. The reason for this spike is unclear to the Department, but is inconsistent with trends in government controlled residential waste collection programs in the county.

Johnson County has few industries in the county that generate large volumes of industrial wastes. The county's largest employer, the Northeast Tennessee Correctional Facility, is also the largest institutional waste generator. Inmates at the Correctional Facility comprise 8% of the total population of the county. The Department has no documentation detailing any current recycling or composting activities occurring at this facility.

Statistics

Year	Population	Disposal	Tons Per Capita
1998	16,709	8,490	0.51
1999	16,736	8,233	0.49
2001	17,638	7,387	0.42
2002	17,925	8,321	0.46
2003	17,948	7,650	0.43
2004	18,049	8,294	0.46
2005	18,116	8,751	0.48
2006	18,043	8,482	0.47
2007	18,107	11,712	0.65
2008	18,112	9,689	0.53
2009	18,006	9,266	0.51



Comparison Counties

Based on Johnson County's reported Class I disposal and tons diverted, the county failed to meet the mandated 25% solid waste reduction goal in 2007. Therefore, the Department is required to objectively assess the activities and expenditures of the region, and local governments in that region, to determine whether the region's program is qualitatively equivalent to other regions that met the goal, and whether the failure was due to factors beyond the control of the region. This qualitative assessment method, prescribed by the Department and approved by the Municipal Solid Waste Advisory Committee, was promulgated as a rule in accordance with the provisions of the Uniform Administrative Procedures Act, compiled in Title 4, Chapter 5. The two counties selected for comparison are Grainger and Lewis.

GRAINGER COUNTY MUNICIPAL SOLID WASTE PLANNING REGION achieved the waste reduction and diversion goal in 2007 with a 33.4% real-time diversion rate. Grainger County has a very low per capita disposal rate, which has remained steady over the past eight years.

Grainger County maintains eight convenience centers located strategically throughout the county, each with active recycling collection facilities. These centers are open and manned 6 to 8 hours daily, 5 to 7 days per week, depending on the community location. Two of the county's three municipalities, Blaine and Rutledge, participate in the cost of maintaining the county's solid waste program by providing an operator and sharing maintenance costs at the convenience center located in their respective municipality.

Grainger County's solid waste program utilizes newspaper ads to keep the public informed on the advantages of recycling, and meets, at least annually, with local industry and business members to discuss their waste reduction efforts. Also, quarterly meetings are held with county and city government officials to keep them apprised of the solid waste program's activities. Recycling is promoted in the school system by way of periodic flyers and poster contests, and having recycling containers located in the schools to collect paper. Regular meetings are held with members of local civic organizations to inform them of local efforts in recycling. Throughout these efforts, emphasis is focused on landfill cost avoidance as a way to justify the cost of operating a recycling program.

Grainger County's estimated total expenditures for Fiscal Year 2007-2008 were \$12,628,780 and the total revenues were \$13,759,300. The county's solid waste expenditures were \$759,967 and the solid waste revenues were \$797,574. The solid waste expenditures were 6.0% of the total county expenditures and the solid waste revenues were 5.8% of the total county revenues.

LEWIS COUNTY MUNICIPAL SOLID WASTE PLANNING REGION reported a 32.96% real-time diversion rate in 2007. It also has had a consistent, low per capita disposal rate over the past ten years.

The county operates one convenience center and transfer station in Hohenwald, the county seat, which is both the population and geographic center of the county. This convenience center, which accepts paper and mixed scrap metals for recycling, is operated full-time, 8 am to 5 pm Monday through Friday, and 8 am to 2 pm Saturday. In addition to the one permanent convenience center, the county operates a mobile center which moves about the county to nine different locations during each week. The route is well established and convenient to the residents. There are three trailers dedicated to corrugated cardboard recycling that are rotated around the county at designated collection sites. Lewis County also operates a Class III/IV landfill and utilizes materials diversion, along with recycling, in order to reach its reduction goal. Some recyclables are marketed locally but most are handled by Recycling Marketing Cooperative of Tennessee (RMCT) located in Lexington, Tennessee. The city of Hohenwald provides curbside waste pick-up service with the cost covered by a solid waste disposal fee billed directly to the residents. For those residents who prefer, there are a couple of private haulers who still offer back-door waste collection service.

The county's solid waste educational program is designed to improve recycling and diversion methods, educate the public on the available facilities in the county, and improve the collection and management of household hazardous waste.

Lewis County's estimated total expenditures for Fiscal Year 2007-2008 were \$7,917,381 and the total revenues were \$8,440,609. The county's solid waste expenditures were \$497,739 and the solid waste revenues were \$515,157. The solid waste expenditures were 6.3% of the total county expenditures and the solid waste revenues were 6.1% of the total county revenues.

Qualitative Equivalency

As stated earlier, T.C.A. §68-211-861 requires each municipal solid waste planning region to achieve a 25% waste reduction and diversion goal for solid waste going to Class I landfills. Johnson County's failure to realize this goal caused the Department to assess the county's solid waste reduction program expenditures and activities to determine if it was qualitatively equivalent to other comparative counties that did reach the reduction goal.

During this qualitative assessment visit to Johnson County by Department staff, all areas were determined to be qualitatively equivalent to those of the comparative counties.

Needs Assessment

T.C.A. § 68-211-811 required the development districts to submit a district needs assessment for each county in the district by September 30, 1992. These needs assessments, to be conducted by the development district staff, shall be revised to reflect subsequent developments in the district by April 1, 1999, and every five years thereafter. Johnson County's Needs Assessment was completed by the First Tennessee Development District. The Johnson County Needs Assessment, revised for 2009, reports that the county's failure to meet the goal when using the real-time methodology, is primarily due to the lack of recycling and waste reduction data from private entities such as businesses and industries. Across the State, regions that have a high participation rate from businesses and industries in reporting recycling data typically achieve the 25% waste reduction and diversion goal using this method. Johnson County and the other counties in the Northeast Tennessee Municipal Solid Waste Planning Region have been implementing a business and industry waste reduction and recycling reporting program through the First Tennessee Development District the past few years. Nearly 50 businesses and industries in Johnson County are surveyed each year by the Development District. When participation in completing the survey is low, the percentage of waste reduction is also low.

The assessment contends that one of the most important needs of the solid waste program is for Mountain City to contribute more to the waste reduction effort within the county. While realizing the prohibitive costs of establishing a program, it is important that the only municipality in the county provide a more comprehensive recycling effort than relying on the drop-off site offered by Johnson County. Out-of-state residents, primarily retirees, moving to Mountain City and Johnson County are slowly expecting more waste reduction and recycling opportunities than currently exist. Additional recycling program components remain the most important infrastructure need in Johnson County to reach the 25% waste reduction and diversion goal.

The assessment states that there is a need for an increase in educational awareness programs to change citizen's behaviors; however, Johnson County does not have the funds to implement a program of this nature at this time. Much of the attention is focused on litter control and illegal dumping activities. The assessment suggests that a program designed to show the public the environmental and financial benefits to the community of recycling and waste reduction programs would be beneficial in improving the public's perception of the county's waste reduction program.

Finally, the assessment concludes the county must improve its effort to increase participation by business and industry in waste reduction and recycling reporting. In the coming years, Johnson County and municipal officials will achieve this through working more closely with major businesses and industries in the Region to further expand the voluntary reporting program. This program is extremely important to the Region in their efforts to attain the 25% waste reduction goal using the real-time calculation method.

Recommendations for Improvement

Although Johnson County was qualitatively equivalent to the comparison counties, the following are areas that should be considered for future success:

- Mountain City's practice of providing curbside collection of solid waste without providing for waste reduction opportunities of similar convenience contributes to low participation in recycling programs by residents serviced by the curbside program. For this reason, residents serviced by the curbside waste collection program should be the target of waste reduction education campaigns and recycling collection points should be added in close proximity to these residents. Exploration of curbside recycling programs is also an option.
- The hours of operation at the county recycling center should be expanded. Currently this center is open 8:30 am to 4:30 pm Monday and Wednesday when many residents are working, and Saturday mornings. Adding additional or alternative hours of operation might greatly increase participation in the recycling program.
- Recycling container placement at the County Transfer Station needs to be redesigned to allow for convenience of use. Currently residents must drive around the Transfer Station to the rear of the facility to find the containers. Signage and instructions for use were not readily apparent. It is possible that a large portion of the area residents are unaware of the containers existence.
- All local governments should work with local business and industry to provide, at a minimum, corrugated cardboard collection from any high volume generators. Additionally, these commercial and industrial entities need to report their waste disposal and recycling efforts to the county for inclusion in the county's portion of the Annual Progress Report.
- Johnson County should begin collecting recycling information from all generators of waste so that as much recycling information can be included in the Annual Progress Report. Frequent communication with businesses and citizens will provide current information and aid the county in its reporting requirements.
- The county should look into working with the Northeast Tennessee Correctional Facility to collect any large amounts of corrugated cardboard, mixed paper and plastics coming from this facility. Other larger correctional facilities in the state have had success with composting programs to manage the large amounts of organic material generated by these facilities. Any programs of this nature being conducted by the facility should be communicated to the county and documented in the Annual Progress Report.

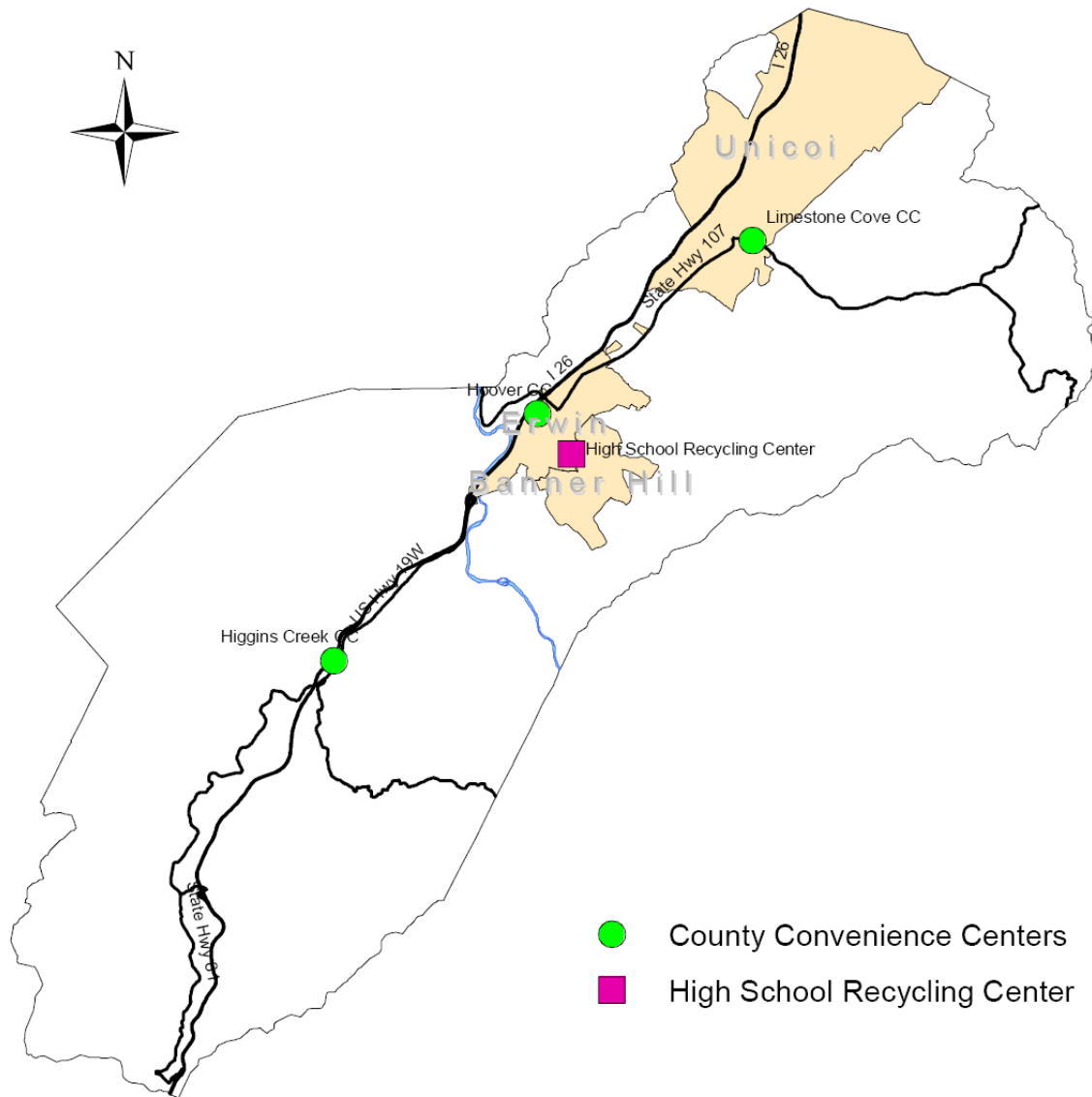
Unicoi County

Independent of the Region, Unicoi County achieved a real-time diversion rate of 6%. Unicoi County, along with the four other counties which failed to meet the goal, was compared to regions that met the goal in 2007 and have similar population size and economic characteristics. DeKalb and Humphreys counties were selected for Unicoi's comparison in calendar year 2007.

In 2008 Unicoi County achieved a real-time diversion rate of 16%. The counties selected for Unicoi's comparison in 2008 were Humphreys and Sequatchie.

On November 3, 2009, Nick Lytle with the Division of Solid and Hazardous Waste Management, visited with Unicoi County Mayor Greg Lynch and Randy Trivette of the city of Erwin's Solid Waste Program to discuss all facets of the solid waste management system. Visits were made to the three county convenience centers and the recycling drop off location at the county high school. The equipment and facilities at each of those sites were examined and noted. Future facility and equipment needs for the program were also reviewed at the time of the visit.

Unicoi County Municipal Solid Waste System



As of 5/17/2010

Solid Waste Facilities and Infrastructure

Every county in Tennessee is required by law to provide a minimum level of waste reduction and waste collection assurance. Unicoi's solid waste collection and recycling programs serve a population of 17,718 and an area of 186 square miles. The minimum number of convenience center sites required by state statute, based on Unicoi County's population, is calculated at one location while subtracting of the percentage of the population served by the solid waste collection systems of Erwin and Unicoi. The County has three convenience centers:

- Limestone Cove Convenience Center located on Highway 197 in the city of Unicoi
- Higgins Creek Convenience Center located south of the town of Erwin
- Hoover Convenience Center on Industrial Drive within the town of Erwin

Each convenience center contains a compactor unit for collection of municipal solid waste. Roll-offs are in place for the collection of white goods and scrap metal as well as bulky municipal solid waste unsuitable for the compactors.

Partitioned roll-offs are in place for the collection of post consumer household recyclables. Mixed paper is placed in one side of the container, while mixed plastic, glass, and metal cans are placed in the other side. Waste Management transports all plastic, paper, glass and non-aluminum cans to either Bluff City or Knoxville for processing. Aluminum cans are collected in separate smaller containers maintained by the convenience center operators.

Each convenience center operator acts as a private contractor. Each year contract bids are received to run each facility. The operator is allowed to keep the scrap metal and white goods for resale as part of their contract. This encourages the operator to divert as much as this material as possible out of the waste stream destined for the landfill. All of the waste collected at the convenience centers is transported to Iris Glen Environmental Center Landfill in Johnson City for disposal.

The town of Erwin provides door-to-door collection of solid waste for all Erwin residents through a contract with Waste Management. Material collected from the program is then transported directly to Iris Glen Environmental Center in Johnson City for disposal.

Erwin manages brush from curbside collection and utility projects. It is mulched and stockpiled to be used as fill and in municipal landscape projects. Residents may also obtain this material free and often can have it delivered at no cost.

The town of Unicoi does not provide directly for solid waste collection services. There are two private companies that provide door-to-door collection for residents in the area. This is a subscription service and is not associated with the Unicoi County solid waste program.

All of the waste collected by private companies is transported directly to the Iris Glen Environmental Center for disposal. Commercial waste is collected by either private haulers or the town of Erwin and is also transported directly to the Iris Glen Environmental Center for disposal.

Unicoi County also provides for collection of paper, plastic and glass at the county high school. The high school has a very involved recycling program that collects most materials generated. Each classroom has recycling containers that are emptied into segregated roll-off containers outside, which are maintained by Waste Management. Waste Management's services are paid for by the county.

Financial Information

T.C.A. § 68-211-874(a) states that each county, solid waste authority and municipality shall account for financial activities related to the management of solid waste in either a special revenue fund or an enterprise fund established expressly for that purpose. According to the Fiscal Year 2008-2009 Annual Financial Report of Unicoi County Tennessee performed by the Tennessee Comptroller of the Treasury, the county operates a special revenue fund to account for its solid waste program. The solid waste financial information of Unicoi County was examined by department staff. From a solid waste management standpoint, the expenditures and revenues appear to be in line with state mandates, however, Unicoi County has no direct funding source for its solid waste special revenue funds and relies entirely upon transfers from general fund revenues.

Revenues

Total	<u>\$0</u>
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Expenditures

Contracts with Private Agencies	\$436,943
Other Sanitation Management	\$50,469
Total	<u>\$487,412</u>

* Excess (Deficiency) of Revenues.....(\$487,412)

* The deficiency in the solid waste/sanitation fund was covered by a transfer of \$483,726 from the General Fund and a \$17,847 insurance recovery.

Unicoi County's estimated total expenditures for Fiscal Year 2008-2009 were \$27,271,036 and the total revenues were \$10,294,851. The county's solid waste expenditures were \$487,412 and the solid waste revenues were \$0. The solid waste expenditures were 1.8% of the total county expenditures and the solid waste revenues

were 0% of the total county revenues. The high total expenditures in Unicoi County's budget for Fiscal Year 2008-2009 a result of a onetime expenditure for a capital project donated to the school department.

Environmental Field Office Report

A search of records at the Johnson City Environmental Field Office disclosed that the permitted convenience centers within Unicoi County have had no major violations over the last five years.

Solid Waste Planning Board

The Solid Waste Management Act states that every solid waste region in the state must appoint a solid waste planning board composed of representatives of each county and each city which participates in a solid waste planning region. The Municipal Solid Waste Planning Region Board is responsible for accurately reviewing and approving annual progress reports and is instrumental in the approval process for any new solid waste permits for the region. At a minimum, having an active board that meets with regularity is vital to complete these tasks. The planning board is also responsible for developing municipal solid waste plans, assessing disposal capacity, collection assurance, providing for solid waste education and assisting in other aspects of integrated solid waste management. Duties and powers of the solid waste planning board are spelled out in T.C.A. § 68-211-813 thru 815.

Unicoi County stated that the Northeast Municipal Solid Waste Planning Region's solid waste planning board meets two to three times a year. The management and operation of the Washington County Tire hub is a frequent topic of discussion. Unicoi County provides financial support to this tire collection center and transports all its scrap tires to this location.

Analysis of Local Conditions

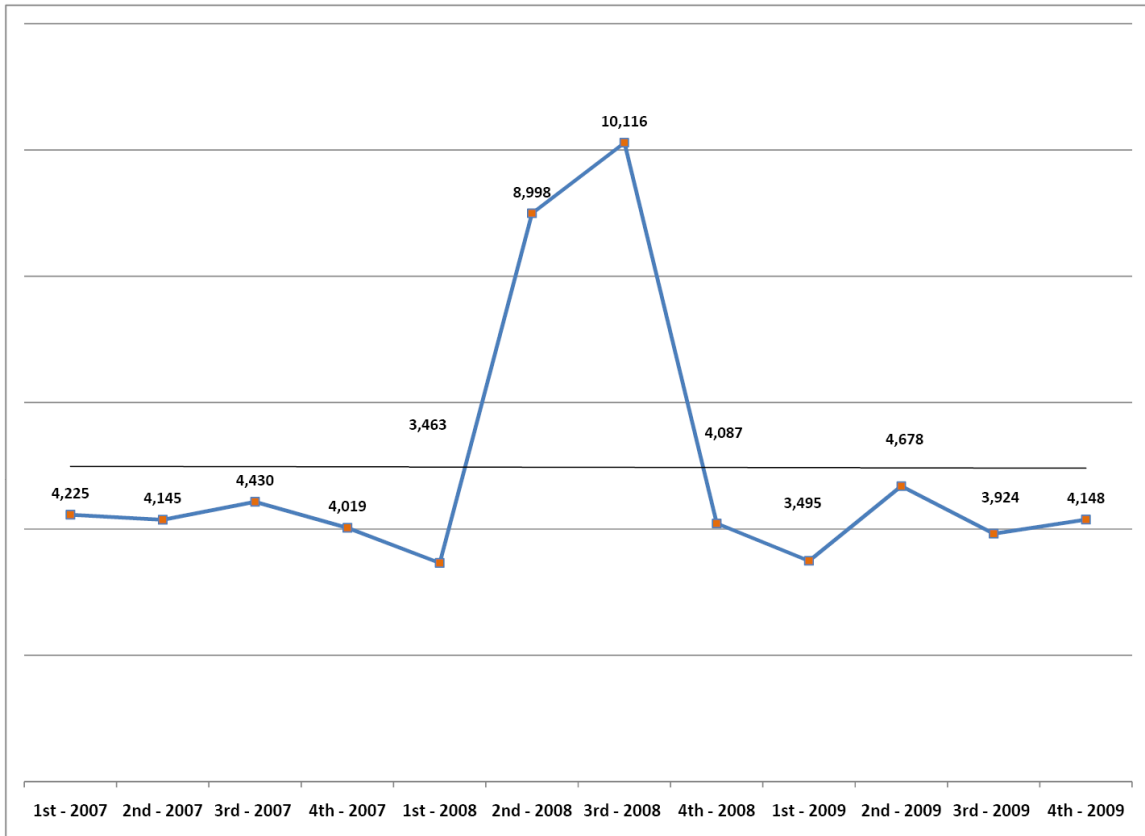
Unicoi is a very mountainous and rural county located entirely within the Cherokee National Forrest. There are currently few industries in the county that generate large volumes of industrial wastes. Nuclear Fuel Services, the county's largest employer, generates large volumes of specialized waste which is typically not included in the county's municipal solid waste stream. Other large generators of waste in the county include the county school system and hospital facility.

In 2008, the State of Tennessee averaged 1.1 tons per capita of waste placed into Class I landfills as reported in the Municipal Solid Waste Regional Annual Progress Reports. In contrast, the Unicoi County reported 39,072 tons of waste going into Class I landfills, or 0.66 tons per person.

Unicoi County is part of the Northeast Municipal Solid Waste Planning Region and no individual county landfill data exists for the 1995 base year for counties that are part of multi-county regions. The county's current year disposal can therefore not be directly compared against the 1995 base year, as the disposal of the entire region is aggregated within the historical files. Therefore, it cannot be determined if Unicoi County is disposing more or less waste into Class I landfills since 1995. The Solid Waste Management Act of 1991 states that since the Region as a whole failed to meet a 25% reduction in waste since 1995, each individual county also fails as well.

Over the last several years, Unicoi has shown very consistent waste disposal patterns with the exception of 2008 when they reported about 60% more Class I disposal. In 2007 Unicoi County disposed of 0.95 tons of waste into Class I landfill per capita. The following year in 2008, the amount rose to 1.51 tons per capita. Examination of the Quarterly Reports for Origin of Class I Municipal Solid Waste (Origin Reports) which are received by the Department directly from all Class I landfills within the State, show a onetime doubling of waste received at Iris Glen Environmental Center in Johnson City during the second and third quarter of calendar year 2008. Without this two quarter anomalous spike in disposal at Iris Glen Environmental Center landfill, Unicoi County would have individually achieved a real-time diversion rate of greater than 25% in 2008. This change would not have been enough to bring the entire Northeast Municipal Solid Waste Planning Region above 25%.

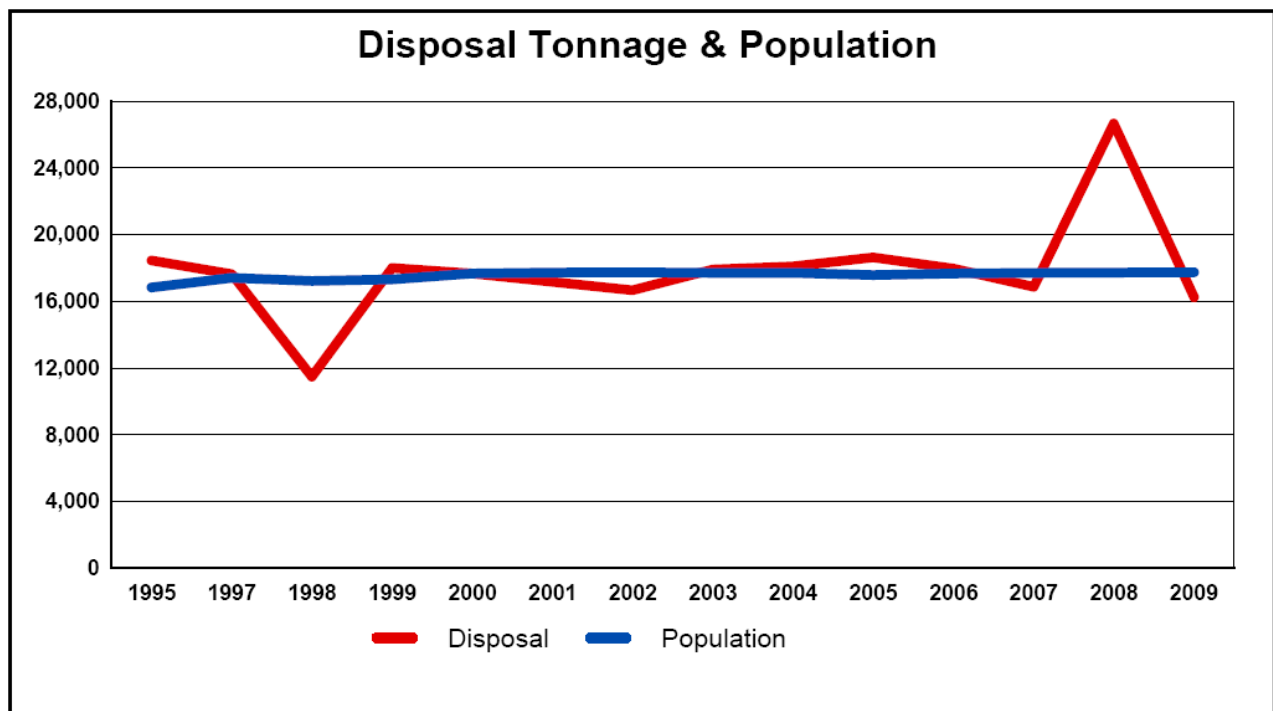
It is the opinion of the Department that the two quarter spike was not the result of post-consumer municipal solid waste under the control of either the county or municipal governments, but rather the result of a onetime event of commercial or industrial origin (see charts below).



Waste Going From Unicoi County to Iris Glen Environmental Center 2007-2009 by Quarter

Statistics

Year	Population	Disposal	Tons Per Capita
1995	16,819	18,437	1.10
1997	17,406	17,633	1.01
1998	17,209	11,482	0.67
1999	17,310	17,995	1.04
2000	17,667	17,656	1.00
2001	17,713	17,152	0.97
2002	17,740	16,657	0.94
2003	17,709	17,907	1.01
2004	17,703	18,089	1.02
2005	17,572	18,636	1.06
2006	17,663	17,969	1.02
2007	17,699	16,856	0.95
2008	17,718	26,671	1.51
2009	17,740	16,258	0.92



Comparison Counties

Based on Unicoi County's reported Class I disposal and tons diverted, the county failed to meet the mandated 25% solid waste reduction goal in 2007 and 2008. Therefore, the Department is required to objectively assess the activities and expenditures of the region, and local governments in that region, to determine whether the region's program is qualitatively equivalent to other regions that met the goal, and whether the failure was due to factors beyond the control of the region. This qualitative assessment method, prescribed by the Department and approved by the Municipal Solid Waste Advisory Committee, was promulgated as a rule in accordance with the provisions of the Uniform Administrative Procedures Act, compiled in Title 4, Chapter 5. The two counties selected for comparison are for Calendar Year 2007 are DeKalb and Humphreys while for 2008 the two counties chosen for comparison are Humphreys and Sequatchie.

DEKALB COUNTY MUNICIPAL SOLID WASTE PLANNING REGION achieved the waste reduction and diversion goal in 2007 with a base year reduction of 27% and a real-time diversion rate of 55%. The county had a 0.76 per capita disposal rate in 2007 and has shown consistent Class I disposal numbers over the past ten years with the exception of a large spike in 2006. The reasons for the increase in Class I landfill disposal in this year of over 100% are unclear.

DeKalb County collects municipal solid waste through the utilization of seven convenience centers that are scattered throughout the county. The convenience centers collect waste through the use of compactors and roll-off units. Three of the seven sites collect post-consumer paper and plastic from the public. The Snow Hill Convenience Center also collects metal and glass. All convenience centers accept tires while six accept used oil.

Plastic and paper are collected at the convenience centers by way of segregated roll-off containers, while open top roll offs are available for bulky goods. Forty-yard open-top containers are used to collect corrugated cardboard at convenience centers that receive higher volumes of material.

The material recovery facility located at the site of the old county landfill is where paper, plastic and corrugated cardboard are baled and sent to market. The facility houses a single horizontal baler unit and is in desperate need of renovations. The county has very little storage space for the finished bales and thus they were stored outside.

The mayor's office personally markets all recyclables directly to buyers to gain top price for the commodities.

The county operates six public collection receptacles or "green box" sites. These sites are unmanned and generally offer no recycling service. They consist of open top waste collection roll-offs. They also accept residential tires. At least two of the sites are manned and all are fenced and have operational hours.

The county owns and operates a Class I and Class III landfill. Only DeKalb County waste is allowed to enter the landfills. In 2008 the landfill underwent an expansion and as of the date of this report has 13 years of life remaining at current disposal rates.

The towns of Liberty and Alexandria run a small scale curbside collection route. Combined, these two municipalities have less than 1,000 residents. The largest municipality, Smithville, operates a curbside collection program as well for a population of just under 4,000 people. Waste from these three cities is transported directly to the DeKalb County Landfill. The citizens of these municipalities utilize the county convenience centers for collection of recyclables.

DeKalb County operates an enterprise fund for the operation of its landfill and sanitation programs. Estimated total expenditures for Fiscal Year 2007-2008 were \$10,850,855 and the total revenues were \$12,030,044. The county's solid waste expenditures were \$1,145,179 and the solid waste revenues were \$1,307,637. The solid waste expenditures were 12.1% of the total county expenditures and the solid waste revenues were 9.5% of the total county revenues.

HUMPHREYS COUNTY MUNICIPAL SOLID WASTE PLANNING REGION surpassed the goal in 2008 with a base year reduction of 38% and a real-time diversion rate of 68%. This was achieved with a 0.8 tons per capita disposal ratio and a gradual reduction of Class I disposal from 21,000 tons in 1999 to 14,000 tons in 2008, and with a slight increase in population during this period.

Humphreys County's solid waste program includes five convenience centers with an additional location planned, a recycling drop-off site, a waste tire collection center, three used oil collection sites, and a Class III/IV landfill. In addition, a non-profit organization, The James Developmental Center, in Waverly operates a MRF collecting, processing, and marketing the county's recyclables. The James Developmental Center is a sheltered workshop, utilizing developmentally challenged personnel in the operation. The center serves as the official recycling facility for Humphreys County, picking up recyclable materials from the county's convenience centers, processing, and marketing them. These materials include: paper, corrugated cardboard, metals, plastics, used oil, auto fluids, and lead-acid batteries. The county employs two full-time solid waste directors: one to handle the convenience centers and transportation of Class I waste; the other to oversee the operation of the Class III/IV landfill. The staff also includes a part-time recycling coordinator, a part-time litter program manager, a scale operator, an equipment operator for the Class III/IV landfill, six convenience center operators, and four truck drivers. The recycling coordinator, together with a part-time litter program manager, present educational programs throughout the school system, aided by Tennessee's Department of Transportation Litter Grant Education Program, and the county's recycling program. The general public is targeted for waste reduction education during 'Earth Day' and 'Music on the Square Day'.

Humphreys County's estimated total expenditures for Fiscal Year 2008-2009 were \$12,851,634 and the total revenues were \$11,412,178. The county's solid waste expenditures were \$620,933 and the solid waste revenues were \$666,342. The solid waste expenditures were 4.8% of the total county expenditures and the solid waste revenues were 5.8% of the total county revenues.

SEQUATCHIE COUNTY MUNICIPAL SOLID WASTE PLANNING REGION achieved the waste reduction goal in 2008 with a real-time diversion rate of 38%. Sequatchie County had a very low per capita disposal rate in 2008, reflective of the fairly consistent Class I disposal numbers over the past ten years.

Sequatchie County maintains five convenience centers, with one part-time and six full-time operators, strategically located throughout the county to maximize access to all residents in the unincorporated areas. Each location is open Monday through Saturday and offers recycling collection for corrugated cardboard and mixed metals. The county operates two roll-off trucks, both with full-time drivers, to service these convenience centers and transport the waste to the Marion County Class I Landfill. Dunlap, the county seat and only incorporated municipality, contracts with Allied Waste to provide curbside waste collection for its residents, which is also transported to the Marion County Class I Landfill. Lesser amounts (50 tons combined) of commercial waste were disposed in Rhea County Landfill and Middlepoint Landfill by private haulers. All county and city residents utilize the convenience centers for their recyclable materials.

A compactor/receiver at the Dunlap convenience center is dedicated to corrugated cardboard received from throughout the county. The other materials collected at the five centers are sold unprocessed to various markets around the area, e.g., Chattanooga Paper Board and Phillips Metals in Chattanooga, and C D Recycling in South Pittsburg. The county's solid waste director/sanitation supervisor oversees the entire solid waste program including convenience centers, waste transportation, recycling collection and marketing. Waste reduction and recycling programs are presented regularly in the schools system in grades K-12.

The Solid Waste Planning Board, with five members representing the county and the city of Dunlap, meets quarterly to discuss all solid waste matters and, according to the county mayor, there is an active working relationship between the Board and his office.

Sequatchie County's estimated total expenditures for Fiscal Year 2008-2009 were \$8,229,506 and the total revenues were \$8,706,399. The county's solid waste expenditures were \$426,917 and the solid waste revenues were \$442,791. The solid waste expenditures were 5.2% of the total county expenditures and the solid waste revenues were 5.1% of the total county revenues.

Qualitative Equivalency

As stated earlier, T.C.A. § 68-211-861 requires each municipal solid waste planning region to achieve a 25% waste reduction and diversion goal for solid waste going to Class I landfills. Unicoi County's failure to realize this goal caused the Department to assess the county's solid waste reduction program expenditures and activities to determine if it was qualitatively equivalent to other comparative counties that did reach the reduction goal.

During this qualitative assessment visit to Unicoi County by Department staff, all areas were determined to be qualitatively equivalent to those of the comparative counties.

Like other counties in the Northeast Municipal Solid Waste Planning Region, Unicoi County has not historically reported a large amount of commercial, industrial, or institutional recycling. Comparison regions, DeKalb and Humphreys, reported much more private recycling programs while providing similar residential solid waste options to their residents. Sequatchie County provides fewer recycling opportunities, and at the same time provides less disposal options for residents, thus achieving a higher reduction rate.

Needs Assessment

T.C.A. § 68-211-811 required the development districts to submit a district needs assessment for each county in the district by September 30, 1992. These needs assessments, to be conducted by the development district staff, shall be revised to reflect subsequent developments in the district by April 1, 1999, and every five years thereafter. Unicoi County's Needs Assessment was completed by the First Tennessee Development District. The Unicoi County Needs Assessment, revised for 2009, reports that Unicoi has failed to independently meet the 25 % waste reduction goal since 2001 primarily due to the lack of recycling and waste reduction data from private entities such as businesses and industries. Historically, across the State, regions that have a high participation rate from businesses and industries in reporting recycling data, typically achieve waste reduction rates greater than 25% using the real-time calculation method.

The assessment states that one of the most important infrastructure improvements that need to be made in the county is that recycling become a more prevalent part of the Erwin solid waste management system. Currently, Erwin has a successful yard waste diversion program that diverts about 100 tons of material each year. However, given the concentration of business and households in town, more recycling opportunities are needed. To accomplish this goal, Erwin will rely on state grant funds to assist with equipment purchases. If grants are not available, it is unlikely the town will establish a recycling program.

In regards to participation and education related to recycling and waste reduction, the assessment concludes that participation in the County recycling program is low and comparable to many other small rural counties in the State. If grant funding were to be made available, the county would be willing to expand the recycling program to service local businesses for corrugated cardboard collection. According to the assessment,

there are no organized education programs in place to promote greater participation in utilization of the recycling drop off locations.

The needs assessment concludes that there are shortcomings in financing the replacement of old equipment and purchasing new recycling collection equipment in the Unicoi County and Erwin systems. These needs will be met at the time of purchase through grants, low interest loans or General Fund appropriations.

Recommendations for Improvement

Unicoi County has not consistently met the waste reduction and diversion goal over the last ten years. Although Unicoi County was qualitatively equivalent to the comparison counties, the following areas should be considered for future success:

- The county currently receives no direct revenue into its Solid Waste and Sanitation Special Revenue Fund. Annual appropriations are transferred into this fund from the county's general operating fund to cover the cost of managing solid waste. The Department recommends changing account principals to, at a minimum, appropriate a certain portion of the local tax base to directly fund solid waste to prevent potential budgetary shortfalls within program.
- While the county is able to operate its three convenience centers very economically by allowing operators to bid for operation on an annual basis with additional compensation of keeping certain revenues from the sale of scrap metals and resalable goods, the county may be losing out on a potential revenue stream greater than the operational savings. This should be analyzed closely.
- Waste Management provides collection units, transportation, and processing for paper, glass and plastics which removes operational costs from the county; however, the county sees no direct revenue from the sale of this material. If the county directly handled more of its recyclables it would create an extra incentive to collect as much as possible to maximize revenues.
- There is no collection of corrugated cardboard or other fiber from the businesses and institutions within the county other than the location at the high school. The county needs to investigate expanding to collect these materials from high density locations and top generators as this material often yields top dollars for recycling programs.
- The county needs to continue to survey local business and industries to identify recycling and waste reduction efforts that might be quantified within the County Recycling Reports of the Annual Progress Reports.
- The county needs to report in more detail the recycling and waste reduction program activities going on within the county. For example, in 2008 the county

reported no tonnages for residential paper, glass and plastics even though Waste Management was collecting this material. Furthermore, the tonnage for mixed metals was less than expected from observations made during county visits. The county should mandate that contracted convenience center operators report the amount of materials that are being collection.

- When available, the County and municipality should apply for State grants to increase their waste reduction infrastructure.

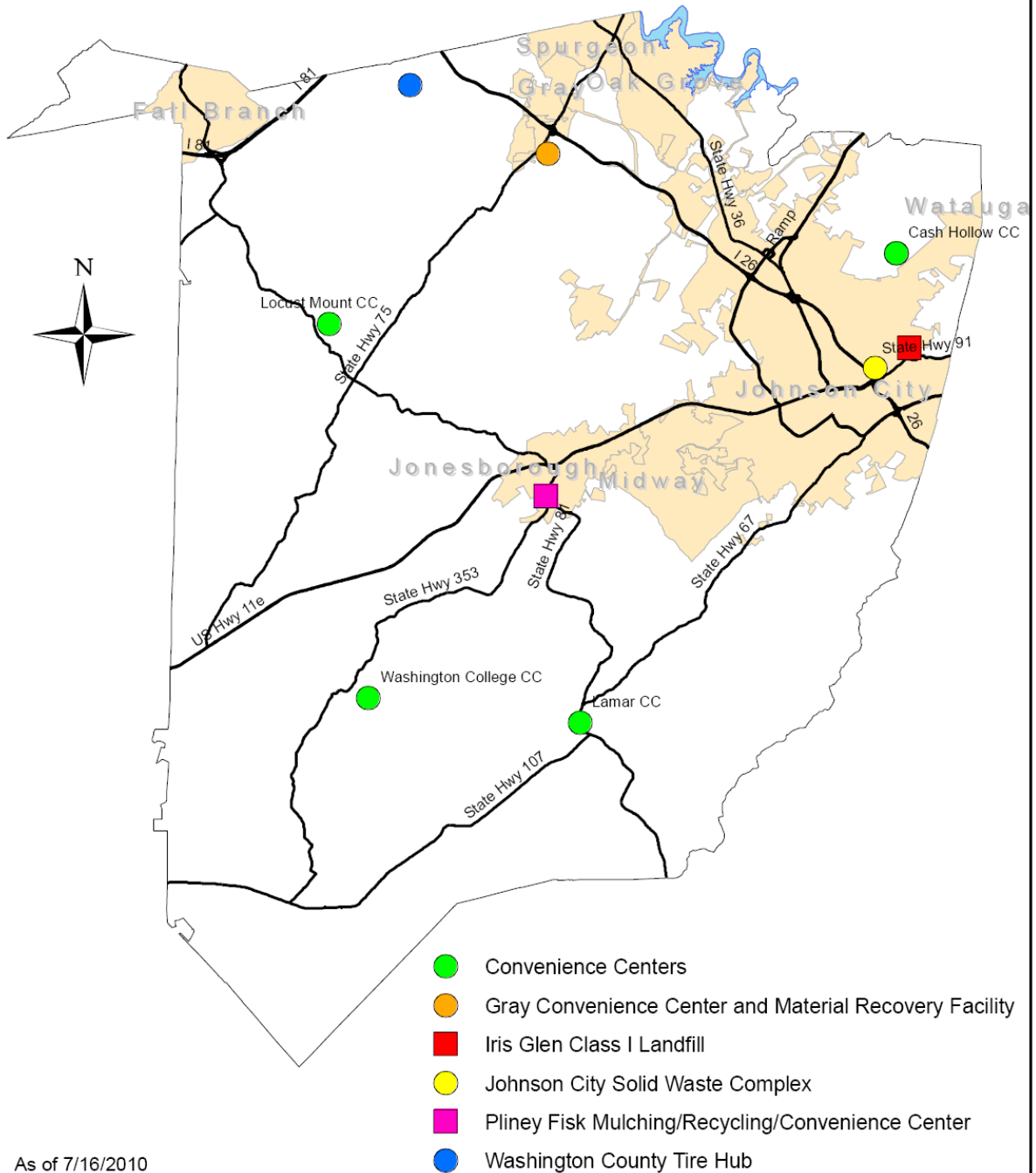
Washington County

Independent of the Region, Washington County achieved a real-time diversion rate of 12%. Washington County, along with the other counties which failed to meet the goal, was compared to regions that met the goal in 2007 and have similar population size and economic characteristics. Blount and Madison counties were selected for Washington's comparison in calendar year 2007.

In 2008 Washington County achieved a real-time diversion rate of 18%. Once again, the counties selected for Washington's comparison in 2008 were Blount and Madison.

On July 16th, 2010, Division of Solid and Hazardous Waste Management staff member Ashby Barnes visited with Washington County Solid Waste Director Charles Baines and Jonesborough Solid Waste Director Jeff Thomas to discuss all facets of the solid waste management programs. Visits were made to each convenience center, the mulching facilities and recycling locations. The equipment at these facilities was examined and noted.

Washington County Municipal Solid Waste System



Solid Waste Facilities and Infrastructure

Every county in Tennessee is required by law to provide a minimum level of waste reduction and waste collection assurance. Washington's solid waste collection and recycling programs serve a population of 120,598 and an area of 326 square miles. The minimum number of convenience center sites required by state statute, based on Washington County's population, is calculated at two locations.

The Washington County Solid Waste Department is managed by Solid Waste and Recycling Director Charles Baines, and 13 full-time and 15-part time staff members.

County residents have the option of using five convenience centers at the following locations:

- 192 Cash Hollow Road in Johnson City (Cash Hollow)
- 224 Harmony Road in Jonesborough (Locust Mount)
- 255 Bill West Road in Jonesborough/Limestone (Washington College)
- 3389 Highway 81 South in Johnson City (Lamar)
- 160 Mosley Road in Gray (Gray)

The Cash Hollow Road location is open 8 am to 5 pm Tuesday through Friday, and 8 am to 12 pm on Saturday. Harmony Road, Bill West Road and Mosley Road locations are open 10 am to 6 pm Tuesday through Friday, and 8 am to 4 pm on Saturday. The Highway 81 South location is open 8 am to 6 pm Tuesday through Thursday, 7 am to 3 pm on Friday, and 8 am to 4 pm on Saturday. The convenience centers are well maintained and are equipped with compactors and sufficient receptacles to handle the waste. When the compactor receivers are full, the county takes them to the Iris Glen Environmental Center Landfill, owned by Johnson City and operated by Waste Management, Inc., in the eastern part of the county.

Also located at these convenience centers are multiple compartmentalized roll-off containers for collection of corrugated cardboard, mixed paper, newspaper, glass, plastic, aluminum cans and scrap metal. These sites also accept electronics, latex and oil-based paint, appliances, lead acid and rechargeable batteries, motor oil, oil filters and antifreeze.

All of the tires collected within the Northeast Tennessee Solid Waste Planning Region are stored at the Washington County Tire Hub located at the site of the closed Bowser Ridge landfill in the northwest portion of the county. The tires are stored in trailers until they are picked up by U.S. Tire Recycling located in North Carolina and processed for beneficial end uses.

Additionally, Washington County provides leaf, brush and other yard waste pickup for county residents. This material is transported to be mulched at either the town of Jonesborough's Pliney Fisk facility or Johnson City's Cash Hollow facility.

The Washington College convenience center is staffed and operated by Washington County employees. The commodities collected are baled and stored on site until they are sold by the Limestone Ruritan Club located next to the convenience center. The revenue generated from these materials goes to the Ruritan Club as per an agreement with the county.

Washington County staffs and operates the remaining four convenience center locations and takes in revenue from the sale of the recyclable commodities collected. These commodities are taken to the MRF at the Gray convenience center for consolidation, baling and storage prior to being shipped to or picked up by various recycling companies.

The county funds the operation of the convenience centers with 5 cents from every dollar of property tax and the revenue from the sale of recyclable commodities. Washington County operates their MRF at the Gray convenience center. County Solid Waste and Recycling Director Charles Baines handles the marketing of these materials. All of the paper products are sold to Profile Products, except for the corrugated cardboard which is marketed through the Recycling Marketing Cooperative for Tennessee, Inc. (RMCT). Plastic is sold to Tri-cities Waste Paper, and the scrap metals are sold to Omni-Source. The e-scrap is sold to Creative Recycling and batteries go to Gray Recycling while Enterprise Waste Oil collects all of the auto fluids. Latex paint is reused or solidified while the oil based paints are collected and disposed by Clean Harbors, the State's household hazardous waste contractor. Glass is given to the city of Johnson City to be crushed and marketed. The county avoids landfill tipping fees for the glass and Johnson City keeps any money made from the sale of the glass.

Washington County has bins placed at county buildings and schools for the collection of corrugated cardboard and mixed paper. These items are then taken to the MRF at the Gray convenience center for baling and storage prior to being shipped to or picked up by various recycling companies.

As part of Washington County's solid waste education programs, recycling information is presented to 5th through 7th grade students and 4-H clubs throughout the school year.

Washington's county seat is the town of Jonesborough which has a population of 5,469. The Jonesborough Solid Waste Department is administered by Solid Waste Director Jeff Thomas and five full-time staff. The town of Jonesborough provides curbside disposal pick-up of household waste for its residents. When full, the truck delivers the waste directly to the Iris Glen Environmental Center Landfill in Johnson City for disposal. The town pays for the curbside collection and convenience center by collecting a monthly fee from each residence.

Additionally, the town operates a convenience center for their residents plus a recycling center at the Pliney Fisk water treatment facility. When the convenience center compactor receiver is full, a Washington County roll-off truck picks up the container and

takes it to the Iris Glen Environmental Center Landfill for disposal. Washington County has an agreement with Jonesborough to haul the roll-off containers at the convenience center in exchange for being allowed to take brush and leaves to the Pliney Fisk recycling facility.

As part of their solid waste program, Jonesborough offers curbside recycling to town residents. The commodities accepted include corrugated cardboard, mixed office paper, PET and HDPE plastic, glass, aluminum and tin cans. Additionally, the town provides cardboard collection for area businesses. The recyclable materials are brought to the Pliney Fisk recycling facility for processing, baling and storage. Jonesborough also offers yard waste pick-up for residents. The brush is taken to a different section of the Pliney Fisk recycling facility where it is mulched and given to residents for landscaping.

The largest municipality in Washington County, with a population of 63,141, is Johnson City. The Johnson City Public Works, Solid Waste Services Division is funded through an enterprise fund based strictly on user fees and sale of recyclable commodities. The Solid Waste Services Division is administered by Solid Waste Manager John Smith and 58 full-time staff. These employees are responsible for providing solid waste and recycling services for both Johnson City and Washington County, a 320 square mile service area consisting of 31,000 residential households and 1,800 commercial and industrial businesses. Recycling services are provided only to those residents and businesses located in Johnson City's municipal limits. The city funds these services via the solid waste enterprise fund. Currently Johnson City charges an \$8 per month all inclusive solid waste fee for the collection of garbage, recyclables, brush, bulk items and leaves.

Johnson City provides door-to-door residential and commercial disposal pick-up for city residents and businesses as well as some county residents and businesses. Johnson City also rents roll-off containers and compactors for businesses that generate larger amounts of waste. The city hauls the collected waste directly to the Iris Glen Environmental Center Landfill which is owned by the city but operated by Waste Management, Inc.

Johnson City has a voluntary curbside, comingled recycling program for city residents, which accepts all paper, corrugated cardboard, PET and HDPE plastic, glass, used oil, automotive batteries, E-scrap, aluminum and scrap metal. The city also offers cardboard and mixed office paper recycling for businesses. They do not offer recycling to multiple family housing. There is no direct charge for the curbside recycling. However, there is a charge for corrugated cardboard and mixed office paper collection from businesses which is based on container rental and frequency of collection.

Additionally, Johnson City has five well maintained, unmanned recycling drop-off locations throughout the city. These drop-off locations accept corrugated cardboard, paper, glass, and metal cans.

All of the recyclable material collected is taken to Johnson City's MRF located at the city's Solid Waste Complex where it is sorted, baled and stored prior to being marketed. The employee who manages the city's litter program also acts as Recycling Coordinator and Commodity Market Director.

Johnson City also offers weekly brush and yard waste pick up for residents. The brush is taken to the Cash Hollow facility where it is mulched and given to residents for landscaping or sold to Domtar Corporation as boiler fuel.

The city has several education programs to promote recycling directed toward residents. Lessons are taught in the city schools and information is relayed via the government information channel and public service announcements as well as at area fairs and festivals. The Recycling Coordinator also gives presentations to area civic groups and the public at large.

Financial Information:

T.C.A. § 68-211-874(a) states that each county, solid waste authority and municipality shall account for financial activities related to the management of solid waste in either a special revenue fund or an enterprise fund established expressly for that purpose. According to the Fiscal Year 2008-2009 Annual Financial Report of Washington County Tennessee performed by the Tennessee Comptroller of the Treasury, Washington County operates a special revenue fund to account for its solid waste program. The solid waste financial information for Washington County was examined by Department staff.

Revenues

Local Taxes	\$1,163,366
Licenses and Permits	\$168
Charge for Current Services	\$134,229
Other Local Revenues	\$167,655
Investment Income	\$9,876
State of Tennessee Grants	\$242,132
Total	<u>\$1,717,426</u>

Expenditures

Sanitation Management	\$1,354,236
Tire Center Operations	\$325,059
Capital Outlay	\$120,374
Total	<u>\$1,799,669</u>

Excess (Deficiency) of Revenues..... (\$82,243)

The Solid Waste/Sanitation Fund contained a balance at the beginning of Fiscal Year 2008-2009 of \$744,787. The Fund had a yearend balance of \$662,554.

Washington County's estimated total expenditures for Fiscal Year 2008-2009 were \$75,704,210 and the total revenues were \$55,506,346. The county's solid waste expenditures were \$1,799,669 and the solid waste revenues were \$1,717,426. The solid waste expenditures were 2.3% of the total county expenditures and the solid waste revenues were 3.1% of the total county revenues.

Environmental Field Office Report

A search of records at the Johnson City Environmental Field Office disclosed no major findings have been made during inspections at the operating permitted solid waste facilities owned and operated by public entities in Washington County over the last five years.

Solid Waste Planning Board

The Solid Waste Management Act states that every solid waste region in the state must appoint a solid waste planning board, composed of representatives of each county and each city which participates in a solid waste planning region. The Municipal Solid Waste Planning Region Board is responsible for accurately reviewing and approving Annual Progress Reports and is instrumental in the approval process for any new solid waste permits for the region. At a minimum, having an active board that meets with regularity is vital to complete these tasks. The planning board is also responsible for developing municipal solid waste plans, assessing disposal capacity and collection assurance, providing for solid waste education, and assisting in other aspects of an integrated solid waste management system. Duties and powers of the solid waste planning board are spelled out in T.C.A. § 68-211-813 thru 815.

The Northeast Tennessee Municipal Solid Waste Regional Planning Board composed of Carter, Johnson, Unicoi and Washington Counties holds quarterly meetings to discuss solid waste issues within the region.

Analysis of Local Conditions

In 1995, the State of Tennessee averaged 1.3 tons per capita of municipal solid waste placed into Class I landfills. Washington County is part of the Northeast Municipal Solid Waste Planning Region (Northeast Region) and no individual county landfill data exist for the 1995 base year for counties that are part of multi-county regions. Washington County's current year disposal can therefore not be directly compared against the 1995 base year, as the disposal of the entire Northeast Region is aggregated within the

historical files. Therefore, it cannot be determined if Washington County is disposing more or less waste into Class I landfills since 1995. The Solid Waste Management Act of 1991 states that since the region as a whole failed to meet a 25% reduction in waste since 1995, each individual county also fails as well.

In 2003, the goal's effective year, the Region reported 154,720 tons of Class I waste or 1.41 tons per person. Individually, Washington's reported Class I waste was 191,765 tons or 1.64 tons per person in 2007 and 179,941 tons or 1.52 tons per person in 2008. In 2007, the State of Tennessee averaged 1.09 tons per capita and 1.05 tons per capita in 2008.

In 2007, Washington County had a real-time diversion rate of 12%. In 2008, the real-time diversion rate was 14%. The real-time diversion rate is calculated by dividing the sum of all material reported with the County Recycling Reports, both public and private, and all material disposed of in Class III/IV landfills by the amount of all disposed and recycled materials.

Residents of Washington County have a variety of post-consumer household recycling opportunities. For the most part, the county's convenience centers are well situated around the county and residents within municipal boundaries have curbside waste disposal and recycling collection as well as access to recycling drop-off locations.

Charles Baines stated that the legality of Washington County's agreement with the Limestone Ruritan Club concerning the Washington College Convenience Center has been questioned by the county's attorney. The county provides the staff and equipment to operate this convenience center and the on-site balers, but the county does not receive any financial benefit from the sale of the recyclable commodities from this facility. It is possible that the county will be ending this agreement.

Examining the Annual Progress Reports for the past six years, it is found that Washington County's Class I disposal, as well as recycling and diversion tonnages, have been somewhat erratic and less than consistent. In spite of this, in the past two years, disposal numbers have decreased and recycling numbers increased with the addition of business and industry waste reduction and recycling data.

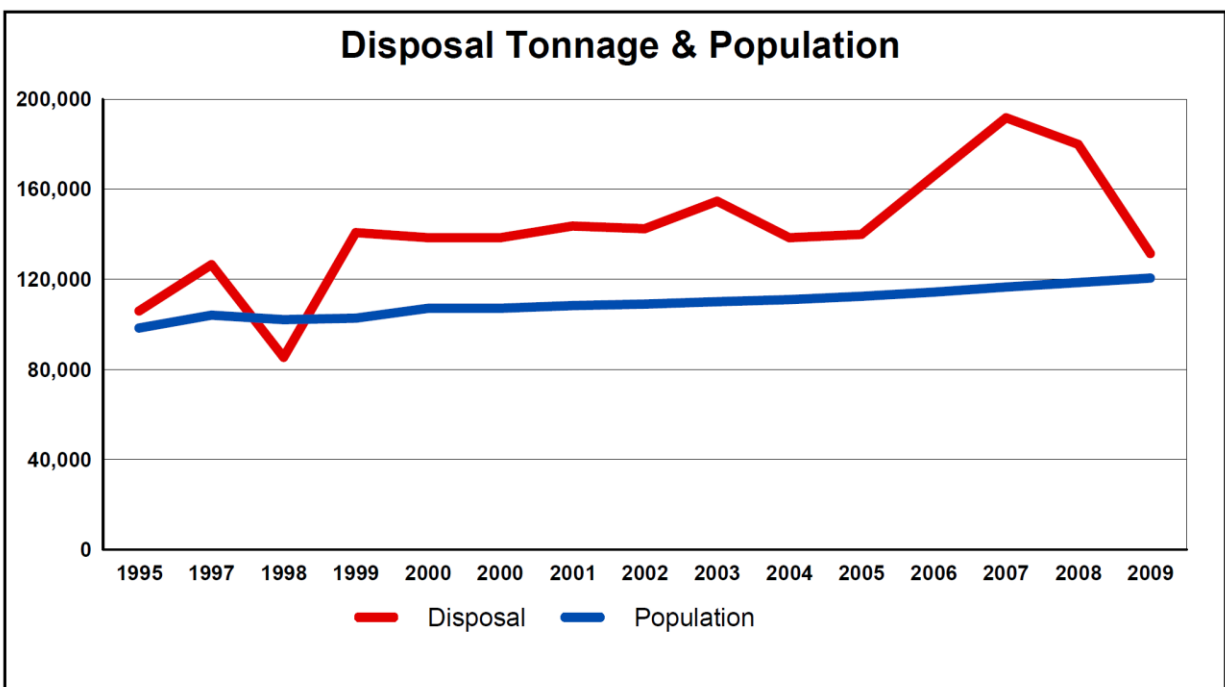
The reason for the large change in waste cannot be determined with 100% certainty; however, Ms. Beatrice Gunter of Waste Management stated that Iris Glen Environmental Center landfill is a regional landfill. In 2006, Waste Management received several large contracts. OmniSource Metals Recycling was disposing 15 to 20 truckloads of fluff a day, items that could not be processed from their car shredding operation. Ms. Gunter indicated that since this contract was not renewed in 2008 could account for the large drop in disposal at the landfill.

Given the historically low reported private recycling numbers, it is the opinion of the Department that Washington County was not consistently counting the commercial and industrial waste reduction and recycling numbers within the county.

	2003	2004	2005	2006	2007	2008
Class I Disposal	154,720	138,506	139,953	165,966	191,764	179,940
Class III/IV Disposal	0	0	0	0	0	0
Public Recycling	21,994	22,928	24,331	26,624	25,830	21,108
Private Recycling	753	565	923	8,534	876	9,003
Real-Time Diversion Rate	13%	14%	15%	18%	13%	14%

Statistics

Year	Population	Disposal	Tons Per Capita
1995	98,477	106,032	1.08
1997	104,070	126,502	1.22
1998	102,192	85,342	0.84
1999	102,814	140,772	1.37
2000	107,198	138,497	1.29
2000	107,198	138,497	1.29
2001	108,380	143,732	1.33
2002	109,019	142,484	1.31
2003	110,078	154,720	1.41
2004	110,996	138,506	1.25
2005	112,507	139,954	1.24
2006	114,316	165,966	1.45
2007	116,657	191,765	1.64
2008	118,639	179,941	1.52
2009	120,598	131,510	1.09



Comparison Counties

Based on Washington County's reported Class I disposal and tons diverted, the county failed to meet the 25% waste reduction and diversion goal in 2007 and 2008. Therefore, the Department is required to assess the activities and expenditures of the region, and local governments in that region, to determine whether the region's program is qualitatively equivalent to other regions that met the goal, and whether the failure was due to factors beyond the control of the region. This qualitative assessment method, prescribed by the Department and approved by the Municipal Solid Waste Advisory Committee, was promulgated as a rule in accordance with the provisions of the Uniform Administrative Procedures Act, compiled in Title 4, Chapter 5. The two counties selected for both the 2007 and 2008 comparisons were Blount & Madison.

BLOUNT COUNTY achieved the 25% waste reduction and diversion goal in 2007 with a base year reduction of 59% and a real-time diversion rate of 60%. Blount County disposed of 66,176 tons of waste into Class I landfills equaling 0.55 tons per capita according to numbers submitted in the 2007 Municipal Solid Waste Annual Progress Report. They achieved the 25% waste reduction and diversion goal in 2008 with a base year reduction of 59% and a real-time diversion rate of 66%. Blount County disposed of 60,843 tons of waste into Class I landfills equaling 0.5 tons per capita according to numbers submitted in the 2008 Municipal Solid Waste Annual Progress Report. Blount County is able to achieve a high base year reduction rate as a result of a 1995 base year disposal rate of 1.33 tons per person. Blount County would need to increase Class I disposal by 166% to fail the 25% waste reduction goal outlined in the Solid Waste Management Act of 1991 by the base year method.

The Blount County Solid Waste Authority is a joint venture operated by Blount County, the City of Alcoa, and the City of Maryville. Together they have joint control over the Blount County Class I and Class III landfills. Blount County has guaranteed through contracts 40% of the proper operation and closure/post-closure care of the Blount County Landfill; while the two cities have guaranteed the remaining 60%, equally. Due to the separate nature of the Authority from any one government, percentages of the revenues and expenditures in relation to total governmental spending is not outlined within this review.

The Blount County landfill only receives waste originating from inside the county. Residents and businesses are allowed to dispose of waste directly at the landfill at a rate of \$38 a ton. Smaller loads are charged according to the size of the load or the number of bags.

Class I waste is being collected by the city of Alcoa and city of Maryville on a house-to-house basis once a week. The waste is then taken to the Class I landfill in Blount County. The municipalities of Friendsville, Rockford and Townsend do not provide solid waste services.. These cities, as well as the county, allow private collection companies to handle the solid waste needs of their residents.

The cities provide seasonal collection of brush and leaves. This material is taken to the city's mulching location located on Best Street across from Sandy Spring Park after which it is used for a variety of beneficial end uses. Blount County landfill accepts untreated wood waste all of which is placed into an air curtain destructor for incineration.

Recycling efforts vary by local government in Blount County. The county has one drop-off site at the landfill that collects newspaper, mixed paper, corrugated cardboard, aluminum cans, scrap metal, glass, plastics, used oil and filters, E-scrap, tires and appliances.

The city of Maryville has four recycling drop-off sites for its residents. The recyclable materials accepted at the drop-off sites are mixed paper, magazines, newspapers, phone books, aluminum cans, plastics, glass and corrugated cardboard. In addition, a used oil and auto battery recycling center is located at the Maryville Operations Center at 332 Home Avenue. Recyclable material is collected at the recycling drop-off sites using compartmentalized trailers. The drop-off locations contract with Spectra Recycling of Maryville to transport, process, and market the material. There is no profit sharing with Maryville for the sale of the commodities collected. Maryville is considering starting curbside collection of recyclable materials, patterned after the city of Alcoa's program.

The city of Alcoa provides curbside collection of recyclable materials. This is done through a contract with Waste Connections, Inc. Residents are allowed to set out plastics, aluminum, tin cans, glass and newspaper in a container that is picked up once a week. The city is considering expanding recycling collection to include office paper. The city is also considering starting RecycleBank next year. This is a program that gives rewards to participants based on the amount of their recycling. Alcoa is hoping this will increase the public participation rates with its curbside recycling collection program.

The city of Townsend has few opportunities for recycling collection available to its citizens; however, there are several private collection sites available throughout the city. Newspaper is collected in recycling bins at the local IGA grocery store and at several other locations in the central area of town around the hotels and resorts where tourist activities are highest. No other types of recycling are offered.

MADISON COUNTY achieved the 25% waste reduction and diversion goal in 2007 with a base year reduction of 33% and a real-time diversion rate of 71%. Madison County disposed of 142,295 tons of waste into Class I landfills equaling 1.47 tons per capita according to numbers submitted in the 2007 Municipal Solid Waste Annual Progress Report. They surpassed the 25% waste reduction and diversion goal in 2008 with a base year reduction of 35% and a real-time diversion rate of 62%. Madison County's per capita disposal ratio was 1.42 tons per capita according to numbers submitted in the 2008 Municipal Solid Waste Annual Progress Report. The state disposal average was 1.05 tons per capita in 2008. Madison County's 1.42 tons per capita was higher than more urban areas such as Davidson and Knox Counties during the same period.

Madison County is consistently able to achieve high base year reduction rates as it has an accepted 1995 base year disposal rate of 2.19 tons per person, which is over twice the 2008 average.

For residents of unincorporated Madison County and the cities of Medon and Three Way, solid waste is collected through a system of ten convenience centers, owned and operated by Madison County Government. In addition to municipal solid waste, Madison County accepts non-ferrous metals, newspapers and corrugated cardboard for recycling at these centers. Some households in these areas choose to transport their solid waste to the landfill themselves while others contract with independent, private haulers. According to local solid waste management officials, there are approximately seven private hauling companies providing services in Madison County at present.

The city of Jackson has a contract with Waste Management, Inc., to collect resident's municipal solid waste. The contract is administered by the city's Health, Sanitation and Animal Control Department. The current contract is in effect until July 2011. Residents within the city are provided twice-a-week garbage collection services with backdoor pickup. Residents also are provided once-a-week, curbside trash collection services for items that are too large for garbage containers.

Jackson began a drop-off recycling program in February 2008 collecting all types of paper and PET and HDPE plastic. Currently, materials are collected at five locations and processed by Southeast Recycled Fiber LLC, a local recycling company. These locations are at two firehouses, two large retail shopping locations and in the city's Centennial Park. .

The city of Jackson sponsors a leaf-collection program in the autumn months. Crews pick up bagged leaves while the leaf machines gather loose leaves in the street right-of-ways. Decomposable bags are available to the public from the city's Street Department. The collected leaves are taken to Jackson Energy Authority (JEA) where they are composted. JEA sells the compost to the public at \$20 per cubic yard.

The city of Humboldt contracts with Barker Brothers, Inc. to provide curbside collection of municipal solid waste for residents. Humboldt does not provide any direct recycling to citizens residing in Madison County.

All solid waste collected in the Region is disposed at the Jackson-Madison County Landfill located a few miles southwest of Jackson. The landfill is owned and operated by Republic Services, Inc. and consists of Class I and Class III/IV operations.

Madison County's estimated total expenditures for Fiscal Year 2008-2009 were \$12,851,634 and the total revenues were \$11,412,178. The county's solid waste expenditures were \$620,933 and the solid waste revenues were \$666,342. The solid waste expenditures were 4.8% of the total county expenditures and the solid waste revenues were 5.8% of the total county revenues.

Qualitative Equivalency

As stated earlier, T.C.A. § 68-211-861 requires each municipal solid waste planning region to achieve a twenty-five percent (25%) reduction and diversion goal for solid waste going to Class I landfills. Washington County's failure to realize this goal caused the Department to assess the county's solid waste reduction program expenditures and activities to determine if it was qualitatively equivalent to other comparative counties that did reach the reduction goal.

During this qualitative assessment and visit to Washington County and its municipalities by Department staff, all areas of Washington County's municipal solid waste and waste reduction programs were determined to be qualitatively equivalent to those of the comparison counties. Washington County and its municipalities have viable waste collection and disposal systems with an adequate number and location of collection facilities.

Department staff noted some areas of the system that can be improved. These areas are discussed further in the "Recommendations for Improvement" section of this document.

Needs Assessment

T.C.A. § 68-211-811 required the development districts to submit a district Needs Assessment for each county in the district by September 30, 1992. These Needs Assessments, to be conducted by the development district staff, shall be revised to reflect subsequent developments in the district by April 1, 1999, and every five years thereafter. Washington County's Needs Assessment was completed by the First Tennessee Development District. The Needs Assessment, revised for 2008, reported that Washington County's population has experienced significant growth since 1998 and that "population will continue to increase over the next 5-7 years. Most likely, this increase will continue beyond 2015". However, "all of the entities in the county have been well prepared for growth and maintained a superior level of service during this time period." Existing major infrastructure is believed to be suitable for the next five years based on current population projections.

While the Needs Assessment stated, "The current system is adequate to serve the existing population for the foreseeable future", there was one potential need worth mentioning. There has been "significant growth in the 'western' section of Washington County" and therefore, "the County has been in preliminary discussions of constructing a new convenience center in this area to accommodate future growth."

Washington County along with other members of the Northeast Tennessee Municipal Solid Waste Planning Region, with help from First Tennessee Development District, has been implementing a business and industry recycling and waste reduction reporting program for the past few years, and will continue to do so for the foreseeable future.

The Needs Assessment stated that when compared to similar regions, Washington County leads the State in the number of public recycling opportunities, composting efforts and yard waste diversion programs it offers to its residents. It cannot make any more improvements to its infrastructure at this time due to the high cost of the improvements relative to the amount of waste reduction that might occur as a result of these improvements. However, Washington County has made the most of “reasonable, sensible and fiscal decisions to expand and evolve their respective waste reduction programs” whenever possible.

According to the Washington County Needs Assessment, the county’s recycling and waste reduction program is becoming increasingly popular with the county’s residents. No additional educational measures are planned although the county does plan to continue the existing educational programs and enhance them as needed.

The Needs Assessment provides lists of potential facilities and equipment for continued and expanded operation of the integrated solid waste management program:

Equipment	Facilities
Washington County needs a roll-off truck and a fork lift.	Washington County needs a new convenience center to deal with a change in population in the western section of the county.
Johnson City needs collection equipment to replace aging equipment.	Jonesborough needs a new MRF building to be able to accommodate their recycling commodity processing and storage

While residential property taxes are a major part of funding all solid waste programs in the county, according to the Needs Assessment, “each local government will rely heavily on grants from the State to supplement purchases.” County officials feel that solid waste equipment and infrastructure grants will be necessary to help replace aging equipment.

In summary, the Needs Assessment points out that, there are still opportunities for Washington County to further enhance the diversion of solid waste from Class I landfills. However, the economy has slowed down changes and improvements. The future will place a greater emphasis on the cost benefit analysis of programs during the next five years. Washington County will continue to reach for their goal having one of the most comprehensive recycling programs in the state of Tennessee.

Recommendations for Improvement

Washington County has not consistently met the waste reduction and diversion goal over the last ten years. Although Washington County did not meet the 25% goal in 2007 or 2008, it has made successful strides toward providing its constituents with the

best waste reduction options in the state. The following are areas that Washington County should consider as they plan for the future needs of the county:

- The Washington County Municipal Solid Waste Regional Planning Board has discussed the need for a convenience center in the western portion of the county to accommodate an increase in population. Washington County should seek technical assistance from the University of Tennessee County Technical Assistance Service (CTAS) and the First Tennessee Development District to determine the best location for the new convenience center.
- Washington County and both municipal governments should continue to work with local schools to educate students and teachers about the benefits of recycling, in waste reduction and resource sustainability and begin source separation of additional commodities such as aluminum and plastic.
- Washington County should continue to promote and publicize the recycling and waste reduction options available to their residents.
- Washington County should continue collecting information from all generators of waste so that as much recycling information as possible can be included in the Annual Progress Report. Frequent communication with businesses and citizens will provide current information and aid the county in its reporting requirements.
- All local governments should continue the use of its websites and free social networking sites to help educate and inform residents of the waste reduction efforts such as available recycling programs, facility locations and hours, and other program related information.
- Washington County and both municipal governments should coordinate their efforts to begin offering on-site recycling options to multiple-family housing in the county.

Conclusion

T.C.A. § 68-211-861 requires each municipal solid waste planning region to achieve a twenty-five percent (25%) waste reduction and diversion goal for solid waste going to Class I landfills by December 31, 2003. The Northeast Municipal Solid Waste Planning Region containing Carter, Johnson, Unicoi and Washington Counties failed to meet the required goal in calendar years 2007 and 2008. This failure caused the Department to qualitatively assess the Region's solid waste reduction program activities and expenditures to determine if it was qualitatively equivalent to other comparative regions that did reach the goal.

After reviewing the Northeast Municipal Solid Waste Planning Region's programs, finances, infrastructure, education and staffing; it is the opinion of the Department that while there is room for improvement, the Region has similar waste reduction and

diversion programs in design and implementation, and are therefore qualitatively equivalent to, the comparative regions and are making a “good faith” effort toward meeting the waste reduction and diversion goal.